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MEDICAL SCIENCE.

JANUARY 1, 1885.

PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*The Relations of the Medical Profession to the Court of Chancery.*[a] By F. R. CRUISE, M.D. Univ. Dubl.; President of the King and Queen's College of Physicians in Ireland; President of the Medical Section of the Academy of Medicine.

GENTLEMEN,—In the capacity of President of the King and Queen's College of Physicians I am intrusted with the pleasing duty of opening to-night the third Session of the Medical Section of the Academy of Medicine in Ireland.

I am perfectly aware that this high honour is due solely to my official position, and, therefore, trust that allowance will be made for my shortcomings. One thing I can promise—namely, that I shall not detain you long.

My first act will be to congratulate the Academy on its eminently satisfactory position, not a little of which is fairly attributable to the many valuable papers and discussions contributed by the Medical Section.

The second volume of our "Transactions" for 1884, in its first 116 pages, contains records of no less than fifteen communications, each one of which is replete with interest, and is worked out with ability and care, which would reflect credit upon any learned society. Of the remaining Sections it is not my province to speak,

[a] An Inaugural Address delivered before the Medical Section of the Academy of Medicine in Ireland, on Friday, November 21, 1884.

unless to add that they hold rank with the Medical Section, and help to place upon a thoroughly safe foundation the new structure of the Academy of Medicine in Ireland.

I had the honour of being amongst the first to sign the requisition which suggested the formation of this Academy, to replace the societies previously existing in Dublin; and, though a few members of the profession were at first somewhat timid about the movement, I think already, at the opening of this third Session, all will agree that the Academy is a brilliant success, a credit to our country and profession, proving once more the truth of the old adage that "Union is strength."

When I learned that it would be my duty to address you this evening I felt much difficulty in deciding what special course I should pursue—not from the want of topics of interest, but rather from their abundance.

At first the thought of medical politics crossed my mind. This theme I quickly rejected. We have had too much of it for the last few years, and have recently so narrowly escaped from the enactment of a measure which an overwhelming majority of us believe would have been injurious to the best interests of the profession, that I feel it would be distasteful to you all were I to rake up the ashes of a conflagration dangerously near, but let us hope extinct.

The next line in which I thought a general address to the Academy might be directed pointed towards a review of the advance and position of medical knowledge.

This would certainly be a congenial and fitting topic. Still I have rejected it. The subject is far too wide to be treated satisfactorily in a brief discourse like the present; moreover, the labours of any individual reviewer in this boundless field sink into insignificance when placed alongside of the records of the Medical Congresses which, of latter days, give such invaluable opportunities for all countries to represent their most advanced scientific work, and, by comparison, consultation, and discussion, elicit all real improvement in ætiology, and in the diagnosis, prevention, and treatment of disease.

If I were to select any one department wherein to illustrate the advance of medicine, I think I could not make a better choice than therapeutics—the end and object of all medical study.

Within my own memory the progress in this department is stupendous—in the introduction of new and valuable remedies;

in their scientific preparation and use; in facilitating their administration; and, though last not least, in the great improvements in the preparation of foods for invalids; in the discriminating use of peptones and peptonised aliments in the myriad derangements of digestion and assimilation, both organic and functional, and in the bolder employment of such adjuvants, which, I may truthfully say, rescues lives innumerable in the most dangerous crises of illness and convalescence.

Apropos to therapeutics, I might attempt some review of the advance in our knowledge of mineral springs, and their utility in chronic diseases—a means of efficient treatment in many conditions which defy the influence of drugs.

Withal I forego the temptation to open up this mine of lore and wealth, reserving such effort for a future, and I hope not distant, occasion. Unwilling to trespass on your time and patience by the systematic treatment of any of the burning topics of a strictly medical nature, I will, with your permission, depart from the beaten track, and ask you to let me open the discussion of some of the highly interesting bearings of medicine in its relations to other professions, and to society at large.

The points at which our profession touches its various surroundings are innumerable and diverse—in some instances most satisfactory, in others very much the opposite. It cannot, therefore, be otherwise than interesting and profitable for us to review and discuss some of these contacts.

Many of those present now doubtless recollect two very interesting papers read here (before the Medical Society of the King and Queen's College of Physicians) by the late Sir Dominic Corrigan; one discussed the filling of insurance certificates concerning patients whom we have attended, and the other raised the question of signing certificates of death.[a] No one who heard these essays can forget them or the interesting debates to which they gave rise, which, moreover, have not been without good results.

Although many of us do not go the full length which the learned baronet advocated, it is quite certain that his essay on "Life Insurance Certificates" has made us more wise and cautious about disclosing to commercial associations confidential particulars of our patients without the full knowledge and consent of those patients; and his astute remarks on the responsibility involved in

[a] See Medical Press, April 22nd, 1868, and Dublin Quarterly Journal of Medical Science. Vol. II., page 341. 1871.

signing certificates of death has, I believe, mainly led to the transformation of the old and objectionable form of registration certificate into its present shape. The great practical interest which must surround such controversies as those raised by Sir Dominic Corrigan emboldens me to open, on the present occasion, the discussion of some topics of a similar nature.

Amongst the many critical positions in which medical practitioners are frequently placed, I know of none more important or difficult than those involving contact with the Law in its various departments. Sometimes we appear in court as experts, to aid, so far as we can by our special knowledge, the administration of justice. This position, let us remember, is a voluntary one; few of us ambition it, many altogether refuse it—a course not unnatural considering the present very unsatisfactory relations between medicine and law. All are under great responsibility, not alone to speak the truth as they may see it, but to speak the truth as it really is, lest, by any want of knowledge or care, we mar the course or defeat the ends of justice, or have it said or thought of us that a retaining fee makes us advocates rather than judges.

Most frequently we appear in court as witnesses, either for the Crown or on the part of contesting litigants. The difficulties in which we are thus placed, both as regards the furtherance of the cause of justice, and obtaining reasonable compensation for expenditure of time, would give material for a long discussion, which I hope to open at some future time.

Sometimes—happily very rarely in Ireland—medical men appear in court as defendants, charged with want of skill or care. Such instances are not uncommon in England; and within a short time we have seen an absolute persecution carried on against two medical gentlemen on a groundless charge. It is very gratifying to know that the relations between our profession and the public in this country are of that cordial and trustful nature that such cases as that of Messrs. Bower and Keates are practically unknown. Those who are familiar with the details of the case to which I allude are also aware how much of its hardship arose from the course taken by the public Prosecutor, who acted in a manner which would have been impossible if he had enjoyed the assistance of a competent medical assessor to supply the knowledge of which he was deficient. We shall not be surprised if, in consequence of this case, we see medical assessors appointed, to give to legal functionaries the aid they so often

grievously want. It would seem, too, that some reform is imminent in the relations between medical men and the laws relating to lunacy, which most certainly are theoretically objectionable, and practically open to abuse.

Among the numerous embarrassing contacts between medicine and law, I know none more frequent or more unsatisfactory than those touching our relations with the Court of Chancery; and, with your permission, I will, on the present occasion, discuss this subject, illustrating my observations by cases which arose within my own individual experience. I feel confident that any remarks I make will be accepted in the spirit in which they are offered, not as captious fault-finding, but as legitimate strictures, designed—

Firstly—To promote reform of existing grievances by bringing them to light; and

Secondly—To warn my younger brethren of the difficulties they are certain to meet with, sooner or later, and thus enable them to take due precautions.

The members of our profession are brought into contact with the Court of Chancery in many ways; principally—

In their attendance on minors; in their attendance on lunatics; in seeking payment of accounts of patients whose property or assets are administered by the court.

As a matter of experience, I may state that I have met with so many difficulties in these relations with the Court of Chancery that I should prefer to surrender the charge of any case rather than voluntarily encounter them. This course, however, is not always possible for me or for anyone else, and hence the absolute necessity for studying the subject.

The grievances to which I will call your attention are principally two—

1st.—The difficulty of recovering payment at all.

2nd.—The injustice and humiliation of having our fees arbitrarily reduced by the judges and officers of the court.

As to the heart-breaking delays and uncertainties encountered in all Chancery processes, I suppose I had better say nothing. They are not quite so great now as formerly, thanks to exposure and agitation, and must needs be endured by all—clients, lawyers, and doctors. We cannot, however, forget the heart-rending picture pourtraying all this drawn by the master-hand of Charles Dickens in "Bleak House."

I shall first illustrate, by a case in point, the hardship of losing

fees for professional attendance caused by the action of officers of the Court of Chancery :—

Case of Miss L.—In the spring of 1877 I was requested to visit Miss L., a ward of Chancery, then under the guardianship of a lady specially appointed by the Lord Chancellor for the purpose, and residing in one of the suburbs of Dublin. I may add that it was by the special direction of the Lord Chancellor that I was retained.

A brief attendance followed. I was then referred by the young lady's guardian, for payment of fees, to the Solicitor for Minors. Early in 1878 I wrote to him stating what I considered due. To this letter I received no reply; twice again I applied to him, but with no better result. That my letters reached their destination I have no doubt; they were correctly addressed, and were not returned to me. Time passed, and amid other engagements the affair escaped my memory, until one day when I met the guardian of the patient. On mentioning the circumstance to her, she advised me to lose no time in looking after the matter, but on inquiry I discovered that the young lady had passed from under the jurisdiction of the court, and hence the debt has remained unpaid to the present day.

It seems to me that all this points to negligence or mismanagement on the part of some officer of the court. It may be said that if, at an early period, I had employed a solicitor to enforce my claim I might have been paid; but, on the other hand, it is to be remembered that the amount was small, and that the expense of legal redress would have swallowed it up, or exceeded it. For such cases there is practically no redress.

To illustrate the arbitrary reduction of claims by officers of the Court of Chancery, I will briefly relate three typical cases :—

I.—*Case of Mr. M.*—In the year 1869 Dr. Banks and I were requested by an eminent firm of solicitors in Dublin to visit Mr. M., residing about five miles from town, and report on his mental state. We did so, and our reports averred that the patient was of unsound mind; but as he was perfectly gentle and manageable, and his means large, we advised that he should be properly cared in his own home, and his property placed under the jurisdiction of the Court of Chancery.

To carry out this advice it was deemed well to hold a commission *de lunatico inquirendo.* Let me observe that this patient was a man of considerable wealth—so large, in fact, that, to save him

needless annoyance, it was arranged by the court to hold the commission at his residence, and not, as usual, in the Four Courts. Accordingly a special jury was brought out, likewise counsel, and Dr. Banks and I were summoned to attend as experts. This we did at a loss of half a day.

The case terminated by the adoption of the course recommended by Dr. Banks and myself. Arrangements were perfected to have Mr. M. carefully looked after in his own home, and his property was taken charge of by the court. In due course the solicitors in charge of the case called upon us to ascertain our fees, which we fixed at fifteen guineas each, including visit and report on a lunatic patient residing five miles from Dublin, and attendance as experts, at a commission held at his residence. The fees were paid at once.

In the year 1871—two years subsequent to the circumstances narrated—Dr. Banks and I were informed by the solicitors that when the accounts were sent before the Taxing-Master he struck off five from the fifteen guineas paid to each of us. Under these circumstances the solicitors asked us to refund the deficit; we did so, as in the event of our refusal we knew that the firm which had employed us should have suffered the loss.

In this case we find the Taxing-Master arbitrarily reducing the fees payable to medical experts for work done for the Court of Chancery, and at the rate of 33 per cent. No plea could be raised of deficient funds or overcharge; simply, the Taxing-Master, who could not be sufficiently acquainted with the character of our work, or the rate of remuneration to which by the usages of the profession we were entitled, assessed the fees according to his own good pleasure. For such a case there is practically no redress.

It may be suggested, and indeed was at the time, that Dr. Banks and I should take proceedings, but, I need not say, no rational person would proceed for such a sum against the Court of Chancery, where large expense would be certain, and probable failure might be looked for.

II.—*Case of Mrs. M.*—In the summer of 1876 I was in attendance upon Mrs. M., who was then in the third stage of pulmonary phthisis. One day, while I was absent from town, she was seized with violent hæmoptysis, and a hurried message was sent for me. My colleague, Dr. Patrick Hayes, kindly went in my absence, and, seeing the urgency of the case, sent to the country for me. In the evening we saw the patient together in consultation. Now commenced one of the most harassing and arduous

attendances in which I have ever been involved. The case was one of recurrent pulmonary hæmorrhage of the most formidable character, occurring in the last stage of consumption, each outburst threatening immediate dissolution. By the express desire of the patient, who was a lady of ample means, Dr. Hayes and I continued jointly in attendance, both in consultation and separately, at all hours, and for a good portion of the time either of us was obliged to remain in the house throughout the night. Every one now present knows what such an attendance means. All other business had to stand aside in great part, and a minute's rest was impossible. After nearly a month, when Dr. Hayes and I were fairly worn out, the patient sank and died.

Shortly after we were called upon to state the amount due, which we did.

At this point I am obliged to confess a serious mistake into which Dr. Hayes and I fell, the evil consequences of which will soon appear. Understanding from the solicitor that we should be paid at once, and wishing to facilitate matters, we omitted to mark the consultation fees. This diminished the total sum by about one-third. The amount which we fixed was, in round figures, sixty guineas each.

No sooner had we named the sum due than delays commenced—first one, then another. Finally we were told that, for the sake of the heir, who was a minor, the property should be administered in the Court of Chancery. Then we knew what was before us—several years' delay, and, in all probability, a reduction of fees already one-third below the ordinary standard.

Four years later, in 1880, the case came into court before the learned judge who was then Master of the Rolls, and now is Lord Chancellor of Ireland. In directing payment to be made he also directed that six pounds should be struck off my account—in other words, reducing it by about 10 per cent. The same was ultimately done in Dr. Hayes's case. The sum of six pounds is a very insignificant one, but the principle involved in striking it off arbitrarily and without sufficient data from a professional point of view, seems to me open to grave objection.

To this day I am mystified as to why the learned judge took this course, or, taking it, decided upon 10 per cent. reduction, rather than 20, 30, or 60 per cent. If the account was a just one, why reduce it at all? If it was an exorbitant one, why not prove that, and treat the case upon its merits?

Here certain questions naturally arise. Was the Master of the Rolls a competent assessor to determine fees for medical services? In my opinion he was not. Upon what grounds did he undertake to reduce the fees? Was it because he considered them too high for the number of visits? Was it that he thought the visits too numerous for the case? I would respectfully urge that on the first count he was no more a competent judge than I would be of a barrister's fees; and on the second count, the number of visits required, he was no judge at all.

I dwell upon this case because I consider the action taken by so high a legal functionary as the Master of the Rolls to be an unwise example, and likely to mislead his subordinates. A legal friend advised me at the time to appeal. Naturally I looked upon this advice as a joke, probably a very expensive joke if I had taken it. For such cases there is practically no redress.

III.—*Case of Miss K.*—In the year 1880 I was called to visit a lady residing some 45 miles from Dublin. During her illness, which terminated fatally, I paid four such visits. Owing to the inconvenient hours of the trains, each visit occupied from 5 p.m. in the afternoon of one day until 11 o'clock next forenoon. When asked to name the fee, I fixed it at £25 each visit.

Owing to some complexities affecting this lady's property it was deemed advisable by her family to have it administered in the Court of Chancery, and I was called on to name the remuneration I expected, which I did, through my solicitor.

The case came forward for adjudication in July, 1883, in the Vice-Chancellor's Court. When my claim for £100 for four visits, as detailed, was put forward, the Chief Clerk at once objected to it; stated that, in his opinion, ten guineas was ample payment for each visit, and, to put it plainly, urged that my fee should be reduced at the rate of *sixty per cent.* This reduction, I have good reason to believe, would have been made had it not been that the solicitor in charge of the lady's property declared that his clients looked upon my demand as perfectly reasonable, and did not wish to have it disputed!

Had the proposed reduction been carried out, I almost think I should have ventured to appeal, but with what loss and final result it is easy to conjecture. For such a case there would have been practically no redress.

Such, gentlemen, have been some of my experiences of the Court of Chancery. It is a duty and a pleasure to add that, while

I have found judges and officers of some of the courts thus strangely biassed, I have invariably experienced justice and liberality from the Crown.

I have designedly restricted my illustrations of the difficulties encountered in dealing with the Court of Chancery to cases which occurred within my own experience, and shall not weary you by quoting the many instances known to me of similar grievances endured by numbers of my medical brethren.

The rules of this Society forbid any discussion upon the President's opening address, but, if pleasing to you, I will on a future occasion, when treating of other contacts of medicine and law, reopen the question and give opportunity for the corroboration of my observations.

I feel confident that you will acquit me of sordid or unworthy motives in touching this important topic. All I seek is to bring to light some of our embarrassments in relation to law, in order that, by united agitation—the privilege of the Constitution under which we have the good fortune to live—we may ultimately obtain justice, and improve the status of our profession. Let this be our object in all we do, and success, worthy of our noble calling, must follow.

Selfish greed would ill befit such a profession as ours, which, more than any other, is charitable and lavish of its gifts; whose disciples from morning until night, and year's beginning to year's end, go their ways, combating disease and striving to prevent it, all the while carrying their lives in their hands. Neither would it become those whose everyday duty has within it, though so little recognised or thought of, a true element of heroism.

To what else can be ascribed the fidelity of such a man as Dr. Rabbeth, who died but a few days ago a martyr to his duty? Small glory, indeed, is to be gained by curing the diphtheria of a little child of four years. Snatch the child from a blazing room or from the water, and all the world applauds the gallant act. Sit by its bedside in a hospital ward, and, with refined heroism, suck out with your own lips the deadly poison of disease, on the bare chance of saving an unnoticed life, and if you live, you live—if you die, you die.

Only this morning some now present accompanied to the grave the remains of a gifted and promising young physician, Dr. Leslie Maturin, who fell a victim to scarlatina caught in the discharge of his duty. Such bravery as his and Dr. Rabbeth's is not uncommon, though little known or thought of, and most assuredly affords a

claim for consideration towards the profession that nurtures and owns such intrepid and devoted soldiers.

Meantime, awaiting a better order of things, we can afford to rest in hope, consoled by the very nature of our vocation.

If our contact with the Court of Chancery involves the losses and humiliation I have here detailed, on the other hand our relations with the public and our patients are the very happiest. To us they are just, and very often generous, and we can repay them amply. For ourselves we need have no misgivings. That which is but the occasional luxury of others—the relief of pain, the mission of mercy above all distinction—is our daily task. That which is the recreation of few save the rich and leisurely—the wondrous operations of Nature—it is our constant business to study and commune with. We truckle to no caprices of power or fashion; acknowledge no worldly dependency, but follow in freedom a life at once useful and bountiful to others, elevating and independent for ourselves.

Gain is but the incident, not the essential of our handiwork, because our true *honoraire* is the memory of insufferable pain relieved, the rescue of valued lives from danger, the restoration of fathers and mothers to their children, and the saving the little ones that seemed doomed to die.

ART. II.—*On Congenital Dislocation of the Hip.*[a] By EDWARD H. BENNETT, M.D. Univ. Dubl.; President of the Royal College of Surgeons in Ireland; Professor of Surgery in the University of Dublin; Surgeon to Sir Patrick Dun's Hospital; President of the Surgical Section of the Academy of Medicine in Ireland.

MY first duty is to acknowledge the honour conferred on me by my present position. Although I preside here by virtue of my office as President of this College, I am none the less bound to express my thanks to the members of the Surgical Section of the Academy of Medicine, for to the opinion they entertain of me in great measure do I owe my election to the Chair of the College.

In accordance with custom I must briefly review the work of the past Session. The meetings of the Section were throughout numerously attended and successfully conducted. The published "Transactions" give full proof of the good quality of the work done.

[a] An Inaugural Address delivered before the Surgical Section of the Academy of Medicine in Ireland, on Friday, November 14, 1884.

Our losses by the death of members are happily very small. I have, however, to record with deep regret the loss the Academy has sustained by the death of Professor J. Stannus Hughes. Another death I must mention with equal regret—that of Mr. Richardson, who, though not a member of the Academy, was for nearly a quarter of a century Secretary of the Surgical Society of Ireland. It would ill become us, so shortly after the conversion of the Surgical Society into a Section of the Academy, to pass by his death without notice after his long service, because he was too staunch a conservative to agree in the change. I now pass to the work before me. Departing from the usual course of delivering an address on some novelty in surgery or on some subject affording scope for sounding the praises of ourselves and of the surgical art, I propose to discuss a branch of surgery in which our movement is, I fear, retrograde. In doing so I hope to escape the charge of throwing stones either indiscriminately or at individuals. When I shall mention an individual my remarks will be directed, not personally, but against the surgical opinion of which he is the modern exponent.

The subject of my remarks has been suggested by the accident of my obtaining a recent specimen of congenital dislocation of the hip. The examination of it has naturally directed my mind to this out-of-the-way groove, but I believe the subject has sufficient interest to occupy us with advantage for a few moments. The pure pathology of the specimen would be worth discussing in the Pathological Section, but at present I must deal with it only so far as it bears on the branch of surgery to which it and the group of specimens on the table belong. I must assume as the first point that congenital dislocations of the hip, of the shoulder, and of the elbow, and congenital club-foot, are all deformities of the same class. My next point as a postulate is that the congenital displacement of the hip, as represented in any one of the specimens before me or in any recorded specimen, may be regarded as of one kind. For practical surgical purposes the exceptions are so few that they may in this discussion be put on one side. The congenital dislocation of the hip is a single dislocation varying in degree, but not in kind; the phenomena of it slightly different in particular cases, but all presenting the characters seen in the typical examples I exhibit. Hence the question at once arises—If these deformities are all of one kind, are they due to a common single cause, whatever that is? When a change pervaded a

series of deformities, which change was throughout the same, it is natural to infer that, although we may not know the cause, the cause is constant. Turning to any member of the Academy, I am certain that no one can tell what the cause is; or if any attempted to assign a cause, I would ask what proof he could advance in support of his answer. Before dealing with the question of proof, what was the history of this particular deformity? The earliest notice of the deformity was by Hippocrates. Then came a long interval to the end of the last century, when an Italian surgeon, Paletta, noticed it; a case or two in the next twenty years until 1825, when Dupuytren published his great paper, which has ever since formed a sort of storehouse from which our principal knowledge is drawn. The next remarkable case was noticed by Edward Hutton,[a] with whom was associated Harrison. The specimens dissected by Harrison and recorded by himself and Hutton were now before the Section, and diagrams of these had been reproduced in many surgical works. The most essential point gained in reference to the deformity after Dupuytren's clinical description was first noticed by Hutton, but has been overlooked and ignored by almost every writer since. At the last Medical Congress, however, which took place at Copenhagen, M. Margary recorded his method of treatment, emphasising by large type in his record the fact which Hutton described—namely, that the axis of the neck of the femur in congenital dislocation is advanced by rotation through an angle of more than a quarter of a circle; and so in all those cases the limb existed in a condition perfectly free from any appearance of rotation inwards. It was a pity the point had been so long lost sight of, since the want of knowledge of it had led to great error. I have asked the question what was the cause. There were a great many causes that might be assigned. Dupuytren's theory was that it was an original fault of the germ, which was sufficiently vague. There was, however, some truth connected with it in this way, that as a family likeness or peculiarity in the face or other parts was observed, congenital dislocation has been noticed to be hereditary, not frequently but sufficiently often to convey the impression that the original germ was defective. Then Stromeyer was of opinion that the disproportion between the head of the femur and the acetabulum was the cause, while Cruveilhier and Chelius held that these deformities (including the whole class, dislocated elbows,

[a] Dublin Journal of Medical Science. Vol. VIII., p. 213.

club-feet, and the like) were due to the position of the fœtus *in utero*, or to violence inflicted on the fœtus during birth. The next of the series of theories was that of Ammon—namely, that it was due to arrest of development. That theory naturally suggested itself first, and in dissecting the specimen I have kept it prominently before me, but I see no evidence of arrest of development as the cause of dislocation. The epiphyses and the shaft of the femur are normal, except so far as they have suffered from the effects of the dislocation. The most important theory was that of Guerin, that during fœtal existence some irregularity of nerve action occurred, and the muscles in particular groups became affected for the time spasmodically. Whatever the change was, whether spasmodic action of muscle or simple disorganisation of muscle of any kind, it was followed by retraction of the muscle, and that retraction caused the displacement. In my own cases I have been struck with the destruction of the fibres of the glutæus maximus muscle—indeed, they had almost disappeared in places. The last theory I purpose mentioning is one which has been strongly supported by Mr. South—namely, that the deformity was due to abnormal delivery, to breech presentation of the fœtus, and to force during delivery by the hook or other means applied upon the flexure of the thigh. In examining such theories it is essential to bear in mind the words of Bacon, that a theory is not the truth, although it may be a mode of viewing the truth. Thus, in Holmes' "System of Surgery," and in text-books based on the article there published, the statement had been made dogmatically that to this cause only is congenital dislocation of the hip due. Mr. Broadhurst[a] says:—"The cause of congenital dislocation of the hip as it presents itself is a purely mechanical cause. This dislocation never occurs except with a preternatural labour, and it occurs especially with presentation of the nates. When the breech presents, the child passes through the pelvis with the legs doubled up and the feet towards the thorax. The hook or the finger is sometimes used to assist the passage of the child." This is a statement which I condemn as being a point blank dogmatic assertion without qualification or a single case to sustain it. Mr. Broadhurst regarded Guerin's theory as unsupportable because of the fact that he himself had never met with any case of muscular spasm in congenital dislocation of the hip, but M. Guerin never asserted that such was the condition. Mr.

[a] Lectures on Orthopædic Surgery. Second Edition, p. 169.

Broadhurst's argument is illogical. "I will place (he says) a single fact against this theory of M. Guerin. In cases of congenital dislocation of the hip and the femur which I have seen there has never been present spasmodic action of any muscle or set of muscles, whether of the muscles of the hip or elsewhere." Broadhurst's test, that a single fact is sufficient to set aside the theory of Guerin, applied to his own theory, would dispose of it too. He has asserted that congenital dislocation of the hip never occurs except with preternatural labour. The specimen before the Section was obtained from the body of a child which I have positive evidence was delivered six years before her death by perfectly natural labour, head foremost. Therefore, if single facts were to be relied on, this would dispose of Broadhurst's theory. Broadhurst relied to some extent on Cruveilhier, but had he read Cruveilhier he would have found that Cruveilhier's infant was born not breech foremost, but head foremost. Further, if this deformity belonged to the series of dislocations akin to dislocation of the elbow, was there any authority living who had asserted that congenital dislocations of the elbow were due to breech presentation? Would anyone contend that club-foot was caused by breech presentation? Therefore, Broadhurst's theory fell to the ground. This question is disposed of with beautiful simplicity by Dr. Agnew—"Congenital dislocations owe their origin to the operation of causes which affect the fœtus *in utero*." While all agreed with him, there was not much to be learned from his explanation. I would not attack the views advanced in any system of surgery except that I hold the errors of diagnosis which occurred resulted from the inaccuracy of the present mode of writing on the subject. It is essential to know that we are not to rely on the history of breech presentation for the occurrence of the dislocation. Some writers had described congenital dislocations of the hip without having seen the affection or studied the anatomy of the bones or soft parts. In dislocations of the hip from violence, the limb, displaced outwards and backwards on the dorsum of the ilium, is rotated inwards, while a tumour in the glutæal region caused by the head of the femur projects posteriorly. One of the specimens before the Section is a traumatic dislocation of the hip, in which such phenomena are very well seen. In displacement from disease the same thing occurred—the limb was inverted; the tumour presented in the glutæal region, and so was the common property of the two—the traumatic and the pathological disloca-

tions. The descriptions of congenital dislocation in the books are what one might call "mixed." Broadhurst states that the head of the femur could be felt on the dorsum of the ilium and presents visibly:—"The symptoms of this dislocation vary with age. At birth it passes unobserved. When the child is lying down the head of the femur is only slightly prominent; it may be felt, however, on rotating the limb. In the erect posture the head of the bone becomes prominent, and presents visibly on the dorsum ilii above and behind the cotyloid cavity" (p. 165).

I have assumed, and it is admitted, that the type is constant; "but the first-mentioned variety, or that upwards and outwards, alone requires attention at this time—the other two forms of dislocation having only been seen in fœtal monstrosities" (*loc. cit.*, 161).

We have but to look at these dissections before us to see that the statement I have quoted is the contrary of the fact. It has, I think, been borrowed from the descriptions of the traumatic and pathological dislocations in which the tumour formed by the head of the bone is so essential a feature. No wonder the dislocation passes long unnoticed if this sign is to be relied on to verify its presence.

The direction of the axes of the thighs is described in language equally misleading, derived too, I believe, from the terms applied to the other forms of dislocation:—"The knees in these cases are directed inwards." In the cast before the Section the knees are wide apart, and when the limbs were extended during life the knees could not be brought nearer to each other than at present. Look at this drawing of Carnochan, and see at once the wide distance between the knees and the scrotum visible from behind. If an unskilled man examines an infant, and expects in a congenital dislocation to find the head of the femur projecting under the glutæus maximus or the limbs crossing or abnormally adducted, he would be greatly mistaken, and yet these are essential signs set down as characteristic of the dislocation by our recognised authorities. With reference to the treatment, I cannot speak from experience, except from the negative experience of having been able to reject the diagnosis of congenital dislocation in an infant; but I hold if anything was to be done in these cases the time at which it ought to be done was the very earliest moment. Everyone knew that club-foot was best treated immediately after birth, and so with any other congenital deformity the earliest treatment was best. But see what followed from defective theories. Agnew laid down that the treatment could only be palliative. In

the vast majority of cases it could only be palliative, because the time was let pass when any possibility of efficient treatment offered. The common statement in every text-book was that the deformity was not usually discovered till the child was noticed to be defective in walking. The specimen exhibited showed that the changes at six years old about the capsules of the joint were such that surgeons would admit they could not be remedied by any rational means. In the earlier stage it might be possible to reduce the displacement; but how had it been carried out? A child had been put in an extending apparatus for six or eight months, and at the end the attempt was made to reduce its hip. Again, it was advocated that the remedy was to be effected by the subcutaneous section of all the muscles attached to the great trochanter. This was a possibility, but it was rather a "large order" to cut all those muscles, and trust to a good limb afterwards. Next, it was suggested to make an open incision, and with a scissors cut away to find a resting-place for the head of the femur by removing anything resisting it. The latest was the opinion laid before the Copenhagen Congress, that either the last-mentioned method—the open incision and the chopping with a scissors such capsule as lay in the way to make a new socket for the head of the femur—was the correct one; or, again, the excision of the head of the femur was the remedy for the affection. Another illustration of the vague state of knowledge on the subject is the passage—"The proper time for the surgeon to intervene in the treatment of congenital dislocation of the hip is when the individual is from fourteen to sixteen years of age."[a] But anyone seeing a specimen like the present so matured in its tissues must admit that if it is incapable of treatment by ordinary chirurgy, what would it be at the age of fourteen or fifteen? Although it might be said I have gone with too much personality into Broadhurst's theories, I have done so because they have become the property of modern writers, and are freely copied. In discussing the subject my object is to revive our knowledge of what had conferred great honour on the profession of this city, and to point out that the pathological facts recorded by our predecessors in the Surgical Society had been too much ignored—notably Hutton's demonstration of the true position of the head of the femur. Although we might not arrive at the whole truth, it is better to know our ignorance than blindly to adopt a dogmatic assertion and say it is the truth.

[a] Abstract of Proceedings of Congress.

ART. III.—*Clinical History of a Case of Anuria, with a description of the Morbid Appearances and of the Pathological Histology.*[a]

By WALTER BERNARD, F.K.Q.C.P.I., Londonderry.

I HAVE thought the following case worthy of bringing under your notice, because it has many interesting features in itself, as will appear in the sequel, and because I have observed the case almost daily and sometimes three times a day during life, and have been able to procure the diseased tissues, and to get excellent microscopical sections. It is rather a rare event in a small provincial town to be able to carry out *post mortem* examinations to one's satisfaction. I have to thank a very able anatomist and pathologist—Mr. Shattock, of University College—for his very kind and patient investigation of the diseased tissues, and for much information bearing on the case:—

Clinical History.—In December, 1883, A. M., aged seventy-five years, a healthy-looking old man of active habits, sent for me. He complained of having to urinate much more frequently than formerly. I had some difficulty in persuading him to use a soft catheter. In a short time he improved and discontinued the use of the catheter.

In February, 1884, I was again sent for, and found he had been bleeding from the nose all night. The usual styptics failed to arrest the hæmorrhage, and I was obliged to plug. A short time afterwards severe hæmaturia set in. A drop of the urine put under the microscope showed abundant red cells. The guaiacum and turpentine test was also used. The hæmaturia was accompanied by rigors, diarrhœa, and thirst. Temperature rose a little above normal. At this time the urine measured 84 ozs. in twenty-four hours, was acid, with a sp. gr. of 1010. Patient complained of no pain. No tumour could be felt in either lumbar region. Pulse was intermittent, and averaged 48 in the minute. This attack of hæmaturia gradually passed off, but left him in a wasted and anæmic condition. He slowly recovered, and continued to use a catheter. On the 22nd of May I again saw him. He was then vomiting a green fluid; this lasted two days. The pulse, which had become normal after the hæmaturia ceased, again began to intermit, and again fell to 48 in the minute. He complained of uneasiness over the right lumbar region, but no tumour could be felt. When vomiting ceased he suffered from thirst. His urine averaged 84 ozs. in twenty-four hours. Prostate at this time felt hard and large, especially its left lobe. On May 28th urine was again bloody—sp. gr. 1010; normal quantity passed. Again vomiting of green matter set in with the slow and intermittent pulse. During this attack, which lasted two days, he felt drowsy.

[a] Read in the Medical Section of the Academy of Medicine in Ireland, November 21, 1884.

From the 6th to the 17th of June there was complete suppression of urine. During all this time he was free from pain, and seemed to suffer no inconvenience. I believe there is no doubt about the suppression. A catheter was frequently passed into the bladder in the presence of other medical men. Palpation and percussion revealed no tumour above the pubes. He was most carefully watched day and night to see if any urine escaped. Not the slightest indication of moisture could be detected on the sheets or on his linen. While the suppression lasted there was no desire whatsoever to urinate, and he felt so well that he wanted to get out of bed and go about his business. His appetite was good, and he slept well; his bowels moved once daily; there was less drowsiness than before the suppression. A hypodermic of pilocarpin salivated him, and caused him to perspire profusely, but had no good effect. Digitalis stupes were applied on the 16th of June—eleventh day. On the following day urine commenced to flow, and averaged 140 ozs. to 125 ozs. in twenty-four hours to the 21st of June. On the 22nd of June 192 ozs. of bloody urine was passed. When urine was clear it was tested for sugar and albumen, but neither was detected; but one constant character in the flow all through was whether it was bloody or clear, that it always showed to different urinometers a sp. gr. of 1010, and was always acid.

23rd of June.—There was wasting, hoarseness, frequent pulse, sub-normal temperature; eyes had a sunken appearance; tongue was dry; urine was smoky, amounting to 80 ozs. in twenty-four hours; superficial veins on abdomen and backs of hands large; marked aortic pulsation to the left of epigastrium. Next day (24th June) urine clearing, 68 ozs. in quantity; voice stronger; looks better; tongue moist; sat up in bed. Pulse regular, 60.

25th.—Superficial veins and pulsation gone.

26th.—He was so well that he insisted on getting out of bed and going out of doors; 80 ozs. of clear, pale urine passed; is thirsty; drinks koumiss.

27th.—80 ozs. of bloody urine passed; feels well, and complains of nothing.

28th.—82 ozs. of bloody urine passed; still feels well.

July 2nd.—80 ozs. with very little blood.

3rd.—Urine free from blood, pale. Patient got out of bed. When he moves about now he has to make his water frequently. Is able to empty his bladder fairly well; a few teaspoonfuls of urine were removed by the catheter after micturition. Feels drowsy.

4th and 5th.—Suppression of urine; no thirst; drowsiness gone; complains of nothing save an uneasiness over the right kidney.

6th, third day.—Passed 17 ozs. mixed with blood during the twenty-four hours.

8th.—Passed 13 ozs. of bloody urine.

During the following week nothing worthy of note occurred, except the suppression of urine for one day.

16th.—He began to lose power over the neck of his bladder during sleep. Urine varies—sometimes it is quite free from blood, at other times it is well coloured. Patient takes a walk in the fields. He complains of a frequent desire to micturate, and of hoarseness and sore throat. The pharynx and tonsils are red and slightly swollen.

From the 16th of July to the 10th of August nothing very remarkable occurred. During that time there was no blood in the urine, which was pale and of the same sp. gr., 1010. The desire to micturate became more frequent. Neither use of catheter nor rest in bed relieved it. On July 27th a large lumbricus, eight inches long, crawled up his throat, and was discharged by the mouth.

August 10th.—I felt a small tumour above the pubes, movable from side to side, hard but elastic; could cause it to move between my finger in the rectum and my hand above the pubes. Catheter only brought away a spoonful of water. The desire to pass water was now almost constant. There was no difficulty in keeping him in bed.

17th.—Appetite good; no decided uræmic odour from skin; no drowsiness; wasting marked.

31st.—Tumour larger than a cricket ball. When I press on tumour above pubes he feels a strong desire to micturate; gets out of bed without showing any signs of weakness to make water almost every half hour; refuses to use a urinal; retches occasionally, but does not vomit his food.

Sept. 7th.—There is now a strong odour from the skin; retching is frequent; drowsiness almost constant. Pulse, 84 to 96; temperature, 97·2°. Appetite and strength failing; wasting very rapid; tumour increasing upwards, backwards, and towards right side, and becoming harder. There is loss of voice.

13th.—Patient died.

Eleven and a half hours after death, with the assistance of Dr. Craig, I removed the urethra, bladder, ureters, kidneys, and a small portion of the liver, and got Mr. Shattock to examine them for me. I will now read his report and exhibit specimens:—

Report by S. G. Shattock, F.R.C.S., London.

The material consists of the bladder and kidneys, with a small portion of the liver, all preserved in spirit.

The bladder contained about an ounce and a half of pale yellow turbid fluid. Its muscular wall is slightly hypertrophied, its interior fascicular.

The mucous membrane of the bladder is extensively destroyed by ulceration, in parts so deeply as to expose the muscular coat. Over the upper part of the bladder, however, the mucous membrane is entire, and is here raised in numerous small hemispheroid or lenticular swellings.

The largest of them is 7 millimetres in its chief diameter. The rest are considerably smaller. The mucous membrane admits of ready removal from the subjacent muscular coat, the dissection showing the eminences to be due to distinct neoplasms, which involve the membrane. On sections the neoplasms are fairly firm and milky white. Towards the general ulcerated area, the summits of the neoplasms are ulcerated, and at the margin the general ulcer has evidently resulted from the coalescence of many smaller ulcers which have spread from similar points of origin.

Superficial ulceration extends from the bladder into the prostatic portion of the urethra, but beyond this the urethral mucous membrane is healthy.

The tissues lying round the lower part of the bladder are thickened and indurated; around the base and the vesiculæ seminales the connective tissue is softened and shreddy. The peritoneum is inseparable from the bladder, except over its summit.

On slicing the prostate, it is seen to be infiltrated with a soft white growth which, for the most part, has replaced the proper glandular structure. The new growth spreads through the gland in variously branching lobular masses, and has not materially altered its figure, except in producing some enlargement of the left lateral lobe.

The vesiculæ and vasa deferentia appear normal. Both the ureters are equally and considerably dilated, tortuous, and ampullary, the enlargement involving also the pelvis and calyces of the kidneys.

Kidneys.—These are of the normal size: the right measures $4\frac{3}{8}$ inches in length; the surface is smooth, and the capsule readily separable. On section they are pale, firm, resilient, and a lens discloses large numbers of minute cysts scattered throughout the cortex. On pouring iodine solution over washed slices the parts stain uniformly brown, and present nothing characteristic of amyloid degeneration.

In the hilum the connective tissue is unnaturally dense, the vessels and renal pelvis being firmly matted together. The renal papillæ present the early flattened condition associated with chronic distension of the pelvis and ureter.

Liver.—The portion furnished cuts firmly and uniformly, and the lobules are without difficulty distinguishable. The central parts of each are stained more yellow than the rest. On pouring iodine solution over the washed surface the tissue stains uniformly, without giving evidence of amyloid change. In some sections are displayed, sparsely scattered, well-defined circular white areas; the largest measures 3 millimetres in diameter, others are of the size of pins' heads.

Morbid Histology.—Parts of the liver and kidneys were hardened in strong spirit, afterwards soaked in water, and then in a mixture of mucilage 2 parts, syrup 1 part, and afterwards frozen, and cut on a Swift's microtome. The sections were washed in distilled water, and

stained with logwood, again washed, the water extracted with absolute alcohol, and then rendered transparent with clove-oil; they were then finally mounted in Canada balsam dissolved in chloroform.

Histological Report.—Kidneys: Sections of the cortex display a perfectly normal condition of the Malpighian corpuscles and renal tubuli, but here and there spaces occur of various form, according to the mode of section—circular or elongated and widening; these are of larger diameter than the normal tubuli, and are devoid of epithelium or contents in the sections. The amount of intertubular stroma is not recognisably increased.

In one kidney the apices of some of the pyramids present a coarser cystic honeycomb-like condition.

Except in these parts the histology of the pyramids is normal, though similar cystic dilatations of tubuli are common, as in the cortex.

Liver.—The histology is normal, except for the neoplasms before referred to.

The new growths have a gland-like construction, and consist of scanty connective tissue forming alveoli, which hold multiform epithelial cells.

In some sections the more central epithelial cells of the alveoli have fallen out, so as to produce a finely perforated or sieve-like appearance, discernible with the naked eye.

Bladder.—The growths affecting the mucous membrane resemble those described in the liver. Widespread extensions of similar morbid growth traverse the interfascicular tissue of the muscular coat, the epithelial character of the cells being in these places quite distinct, and in a better state of preservation than on those portions of the growth which have been for some time macerating after death in the fluid contained in the bladder.

Prostate.—The growth consists of multiform epithelial cells closely pressed together in a lobulated scanty fibrous stroma. The elements are so densely packed that it is only in places that the stroma is satisfactorily discernible.

Remarks.—The hypertrophy and slight sacculation of the bladder, with the dilatation of the ureters, testify to an obstruction to the exit of urine, of slow onset, but which has not progressed to any serious degree. The dilated tubuli in the renal substance are to be ascribed to this chronic distension of the ureters.

There is nothing in the morbid histology to explain, *per se*, the suppressed secretion of urine.

The obstruction to the exit of urine from the bladder is to be ascribed to the morbid growth infiltrating the prostate, and to the growths which have involved the parts about the neck of the bladder.

The new growths within the liver are disseminated carcinomata, produced by secondary infection from the primary growth within the prostate; and the multiple tumours projecting into the bladder must also be explained

as due to infection from the original growth within the prostate, like the widely strewn cutaneous nodules sometimes occurring around a carcinoma originating in the mamma.

The primary growth is evidently that affecting the prostate, since this is by far the most extensive, and it is only in the prostate that a gland tissue exists to furnish the histological basis of the morbid growth.

Lastly, as regards the ulceration of the bladder, it may be assumed, as told from the spreading margin before described, that it has resulted from the breaking down of closely set tumours, though the other more common conditions of inflammation, &c., may have exaggerated its degree.

Remarks on the whole Case.—Cases of carcinoma of the prostate are not very common. Scirrhus appears to be very rare, but softer forms of carcinoma occasionally attack the prostate. In this case the bladder and liver were also involved.

The most important symptom in the whole case is the suppression of urine, which occurred on three occasions. On the first occasion it lasted eleven days, on the second it lasted three days, and on the third one day. Now, it is very difficult to explaiu this symptom. Mr. Shattock, in his report, says—"There is nothing in the morbid histology to explain, *per se*, the suppressed secretion of urine." Sir Henry Thompson, with his usual kinduess, replied to a letter of mine, and suggested that the suppression was probably for the most part *reflex*. This is, I think, the best explanation that can be given.

There is another point well worthy of notice. The ureters and kidneys show signs of obstruction much more than the bladder.

Mr. Shattock, in a letter which followed the report, says the hypertrophy of the bladder is slight; in fact, he says, it may remain an open question whether the bladder is hypertrophied or not. In cases of prolonged obstruction in the urethra or neck of the bladder, the bladder becomes hypertrophied, and by reason of its increased thickness prevents the urine from entering the bladder from the ureters. Now, in this case there was not enough hypertrophy to account for the condition of the ureters and kidneys. The morbid growths caused obstruction round the orifices of the ureters, and brought about the condition found *post mortem*.

ART. IV.—*The Treatment of Prolapsus Uteri.* By WILLIAM J. SMYLY, M.D. Univ. Dubl.; F.K.Q.C.P.I.; Gynæcologist to the City of Dublin Hospital.

THE subject which I have chosen to bring forward on this occasion is the treatment of downward displacements of the pelvic viscera. The term prolapsus uteri, generally applied to these affections, is not altogether satisfactory, nor are those which have been proposed as substitutes for it any more so. All such names as procidentia uteri, protrusio uteri, uterocele, or hysteroptosis, have the common fault of fixing the attention too exclusively upon one organ, the displacement of which is neither the most important nor the most constant factor in such cases. Any or all of the pelvic viscera may take part in the displacement, and the disturbance in their functions (especially those of the bladder and ureters) is of even more consequence than those of the womb itself. There is, in fact, a hernia of the pelvic viscera, in treating which we must proceed in a manner very similar to that adopted by general surgeons under similar conditions elsewhere. In the first place, we restore the organs as nearly as possible to their normal position; and, secondly, we endeavour to keep them there, either by properly adjusted supports or by operative measures. But just as surgeons are divided in opinion as to the advisability of operation for the radical cure of hernia, so are gynæcologists as to its value in cases of prolapse. Amongst English writers the majority seem to be either altogether opposed to it or only half-hearted supporters. Dr. West,[a] for example, says:—"If the operation be limited to cases of special gravity (and to such I apprehend it ought to be confined), I doubt whether any higher commendation can be bestowed on it than is contained in the Hippocratic axiom which pronounces 'a doubtful remedy better than none at all.'" Barnes, Galabin, Atthill, Hart, and Barbour, seem to share the opinion that a recurrence of the displacement is to be expected. Foreign authorities are, however, much more sanguine, amongst whom I should mention especially Marion Sims, Emmet, Simon Fritsch, and Hegar.

An ordinary inguinal hernia, when returned into the abdominal cavity, is prevented from returning by a truss, which, if it does not effect a cure, is certainly not often directly injurious. This cannot be said of the supports resorted to by gynæcologists in the

[a] Diseases of Women. 4th Ed. P. 173.

treatment of prolapse, which by dilating the vagina and inducing leucorrhœa, though palliating symptoms, tend, in a large proportion of cases, to aggravate the mischief; this is especially the case with ring pessaries. On the other hand, the operations for the cure of pelvic displacements are very much less dangerous than those resorted to for the cure of other forms of hernia, and should therefore be undertaken with less reluctance. There are, of course, many causes which render operation impossible, but in every case in which it is possible I would advise it. I quite agree with Kaltenbach[a] "that it should not be reserved for the worst cases; for, though the lesser degrees of prolapse can, no doubt, be relieved by the use of a ring, yet by this means a cure is scarcely ever effected, whilst the evil increases with the use of the apparatus. These cases can, on the other hand, be certainly cured by a trifling operation."

Before entering further into the question of treatment it is necessary for me briefly to refer to a few points in connexion with the ætiology of prolapse. "What makes a woman's womb fall out of her body?" asks Dr. Matthews Duncan.[b] 'To investigate this we must inquire what keeps it in its place. The most important cause is the pressure relations of the abdomen. The womb floats. Suppose in the corpse of a healthy female you open the abdomen, the womb is then always found in a state of descent, because the destruction of the entirety of the abdomen robs it of its support. Before the abdomen was opened the uterus was in its normal position, the fundus about on a level with the brim of the pelvis." There can be no doubt that the uterus is kept in position by pressure relations—that is, by the resistance of the pelvic structures to the downward pressure of the abdomen; but I think that Dr. Duncan is in error in supposing that the opening of the abdomen "robs it of its support," for if this were so any penetrating wound of that cavity would be followed by entrance of air and prolapse; and this we know, from every-day experience, is not the case. That the uterus may be found at a lower level in the dead than in the living body is probable, but I should attribute this rather to the relaxation of its muscular supports than to increased pressure from above.

It would occupy too much time were I to enter at length into the mechanism of the important arrangements by which the pelvic

[a] Die Operative Gynækologie. Hegar und Kaltenbach. P. 686.
[b] Diseases of Women. P. 366.

floor is strengthened, but I may briefly mention that the two chief barriers to descent are the peritoneum and the pelvic diaphragm.

Owing to its elasticity, its extensive attachments, and the way in which it is strengthened by muscular tissue and fibrous structures, the peritoneum offers much greater resistance to downward pressure than is generally supposed.

The pelvic diaphragm is the strong muscular funnel formed by the levator ani and coccygeus muscles, which latter, arising from firm bony and fibrous structures, and inserted into the coccyx, lower part of the rectum, and perinæal body, strengthened by pelvic fascia, and supported by the structures which close the pelvic outlet, braces up the viscera which lie between it and the peritoneum. These two structures (the peritoneum and pelvic diaphragm) are further mutually strengthened and united by connective tissue, vessels, and nerves, and by all otherwise vacant spaces being well padded with fat.

Besides these general arrangements to resist intra-abdominal pressure, there are special means provided for keeping the uterus in its place. When the bladder is empty the uterus lies upon its upper surface in a condition of antiversion and antiflexion, the maintenance of which is of great consequence in preventing prolapse, since the long axis of the uterus is then at an angle to the long axis of the vagina; whereas if the uterus become retroverted its long axis coincides with that of the vagina, and should the latter be dilated and relaxed, a small amount of force will drive the womb into and through it. This condition of antiflexion is maintained (more or less constantly) partly by the vagina, which, passing from the vulva to the cervix, through its rigidity, and its intimate connexion with neighbouring structures, tends to keep these parts asunder; but chiefly by the utero-sacral ligaments or folds of Douglas, which contain so large an amount of muscular tissue as to have been described by Luschka as the retractor muscles of the uterus. The round ligaments also assist, but only when the uterus is displaced upwards or enlarged.

From this it is evident that two causes, either singly or combined, may lead to prolapse—either an increase in the downward pressure or a weakening of the supports. Amongst the causes of the former may be mentioned enlargement, and tumours of, or pressing upon, the uterus, effusion into the abdominal cavity, spinal deformity, and violent efforts, such as lifting heavy weights or straining at stool. The weakening of the supports is most frequently the result of childbearing, but may be due to the use of

pessaries or the relaxation of tissues and absorption of fat from age or wasting disease.

The changes which result from parturition are so important that I must delay a little to consider them. In a normal delivery, when the fœtal head is driven through the os uteri, it will be seen (as Hart has shown) that the previously compact, unbroken pelvic floor is opened up in a perfectly definite way. Before labour the floor is made up of two folding-doors accurately opposed at their oblique margins, whose contact forms the vaginal slit. During labour the action of the uterus opens these up as follows :—It pulls up the pubic segment and drives the child down against the sacral one. When the child is expelled, the pubic segment swings back and lies on the oblique sacral support—in fact, the process is just the same as when one passes out through two swinging doors, one half is pulled towards the passenger, the other is pushed from him. In this way he makes room for his exit, and, when passed, the doors swing into accurate apposition again.

This illustration, although an excellent one, is not *absolutely* true to nature, for the sacral segment has been so enormously distended during labour that it cannot return immediately to its former position, but the anterior one is driven down upon it by the intra-abdominal pressure; thus a cystocele occurs which frequently persists, and is a special form of prolapse. Subinvolution will greatly aggravate the evil, for not only is the uterus affected, but also the peritoneum and the vagina. The anterior vaginal wall will, therefore, continue to descend until it meets with the posterior, and should the latter fail to support it (either through laceration of the perinæum or of the pelvic diaphragm), it will descend still further, dragging the uterus after it. During this process an elongation and hypertrophy of that portion of the cervix into which the vagina is inserted takes place. The doctrine of Huguier—"that prolapse of the uterus is a condition which scarcely ever exists, but that cervical hypertrophy has been almost invariably mistaken for it"—is certainly erroneous. It is still undecided whether this cervical hypertrophy is ever primary, though that it is so occasionally is maintained by most authorities.

It has been denied that laceration of the perinæum has any influence in the ætiology of prolapse; nevertheless it appears to predispose to it in a twofold manner—first, the axis of the vagina and uterus come much more nearly to coincide: and, secondly, by the contraction of the levator ani muscles, the parts into which the

perinæal body has been split are drawn asunder, and the ampulla of the rectum is thrust in between them, and thus the vulva is made to assume a widely-gaping triangular form.

From what has been said it is evident that most of the causes which lead to prolapse are either preventible or remediable.

Our first object should, therefore, be so to conduct labour and childbed as to prevent injury to the pelvic floor and diaphragm, to favour involution, and to correct backward displacement of the uterus.

When, however, laceration does occur the rent should be immediately repaired; and should the muscles be involved, Schatz advises that the sutures be passed so as to unite the torn ends. Subvaginal tears are practically incurable; the ends of the muscle heal in the position to which they have retracted, and are functionally useless. He has not yet ventured to cut down upon them, to suture them.

When, however, we have to treat a case in which prolapse has actually taken place we have, as already stated, two courses open to select from—either the palliative treatment by pessaries, or the more radical one by operation.

I will not occupy your time with a discussion of the various pessaries in use, nor do I wish to be misunderstood as condemning them wholesale. What I do maintain is, that operation is better. Those pessaries which, like Hodges', act by pushing up the posterior fornix vaginæ, so as to antivert the uterus, are the best; but since the lower bar is in them supported by the pelvic diaphragm, they cannot be used in cases where its functions have been destroyed. Those which maintain their position by distension of the vaginal walls are the worst, and increase the evil which they are intended to remedy. Of appliances with belts, straps, and buckles, I have no experience. In former times sponges, or plugs of tow, cotton, or wool, were introduced into the vagina, and kept in place by means of a T-bandage. I have met with a case in which a pregnant woman who had resorted to such a contrivance lost her life through septic poisoning.

By one or another of the many mechanical contrivances in vogue the majority of cases can be at least temporarily benefited; but there are some in which no pessary can be retained, and there are others in which their use is contra-indicated. Such cases can be relieved only by operation, but they are the least favourable for it. In them it frequently assumes serious proportions, involving perhaps the ablation of the entire uterus, with subsequent colpo-

perineorrhaphia. Such terrible cases afford, I think, a strong argument in favour of early operation.

The first who attempted the cure of prolapse by operation was Fricke, of Hamburg (1833). His method consisted in vivifying the inner surfaces of the labia majora and uniting them by suture, a small opening being left both anterior and posterior to the fleshy bridge thus formed to permit of the escape of discharges, but so dilatable were these openings found to be that the uterus could and did descend through either of them.

Whilst Fricke united the edges of the vulva only, Malgaigne went further up, and united a portion of the vaginal walls as well. Baker Brown's operation was similar to Malgaigne's, and this is the proceeding still advocated by Dr. M. Duncan.[a] The most that can be hoped for from these episiorrhaphias is the conversion of a complete into a partial prolapse. Decided improvements in the operation were the narrowing of the vagina, and the attempts to fix it again to its original supports. I need not delay to enumerate all the devices by which these objects were sought to be attained; but the most decided advance in this direction was made by Marshall Hall,[b] who dissected the mucous membrane from large oval surfaces and closed them by suture. Gerardin, in the same year, vivified both walls and united them—an operation which has been revived by Spiegelberg and Lefort, and recently the younger Neugebauer has claimed the priority for his father. Marion Sims improved upon M. Hall's operation by making the raw surfaces on the anterior wall of a V-shape, the apex being towards the urethra. By uniting the legs of the V he made a firm column of mucous membrane along the anterior vaginal wall. This has been found in many cases sufficient to effect a permanent cure.

Simon made another great step towards perfection. His idea was not merely to convert an external prolapse into an internal one, but, having elevated the uterus as nearly as possible into its normal position, to keep it there. For this purpose he prepared a large surface, pentagonal in shape, which, after union, should form a powerful support to the cervix. A practical objection to this operation is the difficulty in obtaining perfect adaptation and complete union of such large surfaces.

Hegar's operation differs in detail but little from Simon's, but it is carried out with a different object. Simon's idea was to prop up

[a] Diseases of Women. P. 371.

[b] Dublin Journal. 1825.

the uterus upon a pedestal, Hegar's to fix the vagina in its entire length by a firm cicatrix, which (extending from the cervix to the vulva) keeps these parts asunder. For this purpose he freshens a large triangular surface on the posterior wall, which, when united, makes a firm vagina and a strong perinæum. With this he combines an anterior colporrhaphia.

I need not here enter into the various modifications of these operations introduced by Martin, Bischoff, Winckel, and others. In my opinion, Hegar's is the best; but I must admit that I have not tried any other. A description of most of them will be found in Dr. Macan's Report on this subject in this Journal for Nov., 1881. Huguier's endeavours to excise the entire cervix were the natural outcome of his teaching. A much less hazardous, but at the same time a very useful operation, is the funnel-shaped excision of the cervix proposed by Hegar. Opening the abdominal cavity, drawing up the uterus, and fixing it in the wound, is an operation which I think few would venture upon for the relief of a condition so remotely dangerous to life as prolapsus uteri; but the idea of cutting down upon and drawing out the round ligaments, and thus elevating and anti-flecting the uterus, as proposed by Adams and carried out by Alexander, of Liverpool, appears to me to be a good and scientific one.

I shall now detail two cases in which I have operated for the cure of prolapse :—

Case I.—Mrs. B., aged fifty-four, midwife. Has had eight children, the youngest of which is eleven years of age, and five abortions. After most of her later confinements she suffered from prolonged hæmorrhagic discharges, probably due to deficient involution of the uterus. She complained for some time of dragging pain at the umbilicus and in the groins, and a bearing-down feeling, but did not do anything to relieve these sensations.

Eight years ago she was in training as a nursetender, when, in consequence of lifting some heavy weight, suddenly the uterus came completely outside the vulva. She was taken into Sir P. Dun's Hospital, and was from that time more or less constantly under the care of the late Sir Edward Sinclair. Finding that the uterus could not be kept up by any kind of artificial support, he advised her to submit to operation, and this she consented to do. He was, however, prevented by illness from carrying out his purpose.

Last December she came to the City of Dublin Hospital, complaining that she could neither walk nor sit down without severe pain. There was a complete prolapse of the uterus. The cervix and vagina were

greatly hypertrophied and deeply ulcerated, and the uterus measured four inches in length.

Some weeks in bed were required to diminish the vaginal hypertrophy sufficiently to operate. Hegar's method was carried out as follows:—The patient having been placed in the lithotomy position, a fold of mucous membrane extending from the cervix to within about half an inch of the urethra was caught up with the forceps, and its base transfixed with needles armed with silver wires, the fold cut away, and the sutures secured.

The posterior colporrhaphia was a much more tedious affair. A triangular surface, the apex of which was at the cervix and the base at the anus, and extending about an inch and a half on either side of it, was put upon the stretch with American bullet forceps and denuded of mucous membrane. During this process, and whilst the sutures were being inserted, the surface was constantly irrigated with corrosive sublimate solution (1–2,000).

The wounds healed by first intention, and now, nine months after the operation, she is able to go about and to walk considerable distances without artificial support or any sign of a recurrence of the displacement. She has also resumed her duties as a midwife.

Case II.—The second case was not of so exaggerated a nature as the former. The uterus, though prolapsed, did not come outside the vulva. The operation was performed in April of this year, and was similar to that already described, only that in doing the anterior colporrhaphia I used a clamp which I had obtained in the meantime, and which I believe to have been invented by Hegar, but of this I am uncertain. By using this clamp the operation was done more expeditiously. In using it, however, there is danger of wounding the bladder; but this accident can be guarded against, if after the insertion of the needles a sound be passed into the bladder, before the fold of membrane held by the forceps be removed. In this case also union occurred by first intention. I saw her quite recently, and believe her to be permanently cured.

It is not possible to draw conclusions from two cases, but Hegar's results have been very brilliant. He reports 84 per cent. cured, and this after prolonged observation. Many of these have been delivered (one four times) without any recurrence of the prolapse.

I shall now conclude in the words of Dr. Fritsch:—"Thanks to modern operators, the prolapse operation has reached such perfection that one can with certainty bespeak success. Thanks to antiseptics, the dangers have disappeared. It is therefore rational to operate on every patient with prolapse."[a]

[a] Die Lageveränderungen der Gebärmutter. P. 204.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Treatise on the Science and Practice of Midwifery. By W. S. Playfair, M.D., F.R.C.P. London: Smith, Elder, & Co. Fifth Edition. Two Vols. Pp. 830. 1884.

This is the fifth edition of a work first published eight years ago. Despite its evident popularity, we regret that we are no more able now than then to report favourably upon it as a work which professes to embody the most recent advances in the subject of which it treats. Reluctantly we feel compelled to endorse as still substantially true the opinion expressed in our notice of the first edition—that it was to be regarded neither as exhaustive, reliable, nor as being at all times clearly and logically written. It is true that many of the inaccuracies, as to fact and mode of expression, noticed in the first edition, have since been corrected, and that in the one before us there are fewer involved passages, misquotations, and mistakes in the matter of authorities. But having read through the two volumes, we are forced to conclude, now, as formerly, that the author is unfit for the task he has set himself, and that his acquaintance with the recent literature of his subject is not such as enables him to treat it either fully or accurately.

We shall not attempt to analyse the fifth as closely as we did the first edition, but we feel in equity bound to make good the views we have unhesitatingly stated above. To do so it will be needed only to notice certain defects and omissions which appear to us to be of vital importance in estimating its real value. Dr. Playfair deals with the subject of puerperal fevers under the head of "Puerperal Septicæmia." He tentatively accepts what he states to be the modern view, that "the disease is, in fact, identical with the condition known as pyæmia or septicæmia" (Vol. II., p. 336). Such a statement is replete with the most confusing inaccuracies. In the first place the various diseases, formerly and still often included under the term "Puerperal Fever," can in no sense be properly spoken of as "the disease." The very corner-stone of

modern opinion upon this subject rests upon the recognition that there are various kinds of puerperal fevers, which cannot properly be included under any single term. Again, the passage quoted, and others from the same chapter, appear to show that Dr. Playfair regards pyæmia aud septicæmia as convertible terms, though recent studies of this question render it far more probable that they are entirely distinct pathological conditions.

Further on in the same chapter the clastification of cases into "auto-genetic" and "hetero-genetic" varieties is adopted by the author as the "most practical division of the subject." Such, in our opinion, it is very far from being. A much more useful and accurate classification of puerperal fevers is that into the "non-infective" and "infective" varieties, of which the types are to be found in "septic poisoning" (puerperal sapræmia) and "septic infection." These two classes are distinguished from one another in causation, progress, lesions, and results; though their striking differences are scarcely even suggested in Dr. Playfair's treatment of the subject. The great subject of the relation of micro-organisms to puerperal fevers is very briefly and inadequately noticed, and no allusion is made to the distinction between such of these as are "pathogenic" (infective), and such as are merely "septic" in their action. The doubts which at present surround the questions of microphytic action constitute, we think, no valid excuse for not placing before the reader some account of what has been already proved or rendered probable in this regard.

The precautions recommended for the prophylaxis of puerperal fevers during childbed and labour (Vol. II., pp. 279 and 348), instead of seeming, as Dr. Playfair thinks they may, "frivolous and useless," appear to us rather as ridiculously inadequate, provided the infective origin of the disease be thoroughly believed in. In so vitally important an issue we must strenuously shun considering what others may think of our prophylactic endeavours, and strive only to act fully up to the beliefs which we have arrived at after conscientious consideration of the entire available evidence. The very remarkable results given by "antiseptic midwifery," wherever fully tried, are but passingly alluded to by Dr. Playfair, and notwithstanding his general acceptance of the grounds upon which the strictest antisepsis is based, we scarcely think that he can be said to have realised the full practical outcomes of his belief. Otherwise he would surely have insisted upon antiseptic precautions when considering the management of natural labour, instead of suggesting

them, by way of an afterthought, when dealing with the care of the puerperal state and the subject of puerperal septicæmia. If such precautions are necessary at all, they should be insisted upon as a routine part of the entire practice of midwifery, rather than relegated to certain chapters and then suggested, more than insisted upon, in their most attenuated form.

The treatment of inevitable and of incomplete abortion is very inadequately given (Vol. I., p. 292). The directions for plugging the vagina are not such as would enable any tyro to perform this simple operation with efficiency. The use of the duckbill speculum is not specially mentioned, and neither is the need of a T bandage for keeping the plug in place, nor that of emptying the bladder and rectum before filling the vagina. Where the os is undilated, and action is necessary, dilatation by sponge-tents (!) is recommended, and no mention is made of Hegar's dilators, or others of the same nature. Old, and we had hoped outworn, lines are followed in the advice to procrastinate and temporise until the symptoms of septic poisoning make active interference and immediate removal of retained secundines absolutely necessary. The temporising measures include plugging of the vagina, dilatation of the cervix by sponge-tents, and intra-uterine injections of diluted Condy's fluid—measures which we regard as jeopardising the health and life of the patient infinitely more than the simple plan of dilating the cervix rapidly, and immediately clearing out the uterine cavity of its contents by the fingers, assisted, if necessary, by a dulled curette or spoon. This method of treatment has been lately much discussed and strongly recommended by some leading American authorities, but is not even alluded to by Dr. Playfair.

Baudl's views are entirely omitted from the paragraphs dealing with the changes undergone by the cervix during pregnancy. The retraction of the uterus and thinning of its lower segment are scarcely suggested among the mechanical phenomena of labour. In much the same way Baudl's epoch-making contribution to the study of the causes and mechanical prodromata of ruptured uterus receives only a scant and all too slight an acknowledgment.

In describing Cæsarean section (Vol. II., pp. 238, *et seq.*) no mention is made of two most important modifications in its *technique*—Müller's, which consists in turning the uterus out of the abdomen, and passing an elastic ligature around its base, so as to control hæmorrhage during incision, and prevent the escape of any of its contents into the peritoneal cavity; and Sänger's, which consists in

a particular method of muscular excision, adapted to cases where the muscular tissue remains relaxed after delivery of the child, together with a special arrangement of deep muscular and superficial peritoneal sutures, the free edges of the cut peritoneum being also folded in over the muscular wounds. The latter modification has been now practised in four cases, three of which resulted favourably in Leopold's hands, and one (Beumer) unsuccessfully, where the case was complicated by old pyonephrosis. Dr. Playfair simply contents himself with stating that the balance of evidence favours uterine sutures, whereas it would now-a-days amount to the grossest malpractice to complete such an operation without them. Two pages only are devoted to Porro's operation, and for practical purposes these might have been left out, so brief are the directions given for its performance, notwithstanding the statement that its risks are considerably less than those of Cæsarean section. Müller's modification is barely mentioned. The special indications for the operation, as formulated by Sänger, are not given, nor is the advantage of being able to perform it at any time before labour sets in mentioned. In a work professing completeness the account given of this, the most famous of modern obstetric operations, is positively absurd in its incompleteness. Laparo-elytrotomy obtains a short chapter to itself, but here we find no statistics of the operation, and the student may readily suppose that it has been performed much more frequently than has been the case.

No mention is made of Tarnier's method of rearing immature infants by the so-called incubator, nor of Anvard's simplification of the cot used. When describing axis-traction forceps an old model of Tarnier's is figured with the application handles curved instead of straight, as in his latest model of the instrument. Hot water injections at a temperature of from 100°–120° F. are recommended among the measures for combating *post partum* hæmorrhage; and but slight knowledge is needed to recognise the fact that the latter limit is entirely too high. Here, as well as in other places, the precautions to be taken when making intra-uterine injections are insufficiently attended to, and we find no mention of the much safer method of irrigation. When considering the subject of protracted labours, we note, with extreme wonder, the statement "that the results, as regards both the mother and child, are identical, whatever may be the cause of delay" (Vol. II., p. 4). Dr. G. Johnston is alluded to as the late Master of the Rotunda

Hospital, and Dr. Atthill is more than once mentioned as the present Master.

The method of dealing with some questions, strongly commented upon in our notice of the first edition, has since undergone no noticeable improvement. Among these we may mention the advice given as to the mode of reposing a retroverted gravid uterus (Vol. I., p. 247); the very imperfect and unillustrated account of the methods employed in difficult cases of pelvic presentation; the direction given (Vol. I., p. 348) to expel the placenta by Credé's method into the bed instead of into the free hand of the attendant; the very insufficient description of the operation for the immediate repair of a lacerated perinæum (Vol. I., p. 343); the antiquated directions for the antiseptic (?) treatment of mammary abscess (Vol. II., p. 296); the utterly inadequate treatment of the question of pelvic deformities, &c.

We need proceed no further in criticism of this book, which at a cost of 28s. is published in two very handsome and well-printed volumes. In justice to the publishers, we are bound to add that their part of the work is much more creditable than the author's, and has probably had much more effect upon its sale. With such a work before them as that of Lusk, we would advise students to avoid squandering money upon what is, after all, only the outside of a Treatise upon Midwifery.

Syphilis and Pseudo-Syphilis. By Alfred Cooper, F.R.C.S. Engl.; Vice-President of the Medical Society of London; Senior Surgeon to Out-patients, with charge of Male Wards, Lock Hospital; Surgeon to St. Mark's Hospital, and to West End Hospital for Paralysis and Epilepsy. London: J. & A. Churchill. 1884. Pp. 339.

This work contains, in small compass, an admirable compendium of the principal facts and speculations connected with the most formidable disease with which humanity is afflicted. Mr. Cooper's position as Surgeon to the London Lock Hospital for nearly twenty years is a guarantee of his ample opportunities of studying the subject, and that he has availed himself of these to the fullest extent the book itself attests. We do not propose to review this useful work at any length, but merely to notice briefly a few of the still undecided controversies, and to state the conclusions to which the author's experience and judgment have led him.

The first question, to which no conclusive answer has yet been given, is—When did syphilis first appear in the Eastern Hemisphere? Mr. Cooper decides, without hesitation, against the view that it was introduced from America in the end of the fifteenth century; but he states the case of the other side fairly, and as fully as his limits allowed, and he will probably leave those who were of a different opinion unconvinced. He maintains that the disease is indicated in Chinese medical works older than Columbus by thirty-five centuries, and in a Hindu treatise on medicine eleven hundred years before him, and that in Greek and Roman writers, medical and non-medical, many passages can be found which may refer to syphilitic affections. It cannot be denied, he admits, that in 1495 and 1496 "the venereal disease assumed the form of an intensely virulent and widespread epidemic," and that this explosion was coincident with the presence of returned soldiers from the West Indies, where the disease was rife. He does not mention the suggestion or theory—which we remember to have once seen—that the disease was originally contracted in America from the guanaco, which is subject to a disease resembling syphilis in some of its manifestations.

Whether syphilis may be, and is, conveyed by the process of vaccination is a question which has passed out of the region of controversy. "It has been clearly shown that syphilis and cowpox can be transmitted simultaneously from one person to another." "Cases of the transmission of syphilis by means of vaccination have been reported from almost every country in Europe." Most of these cases are unquestionably explicable on the rational hypothesis, supported by the results of experiment, that the syphilitic virus is contained in the blood, while the vaccine lymph is free. In other cases the irritation due to the puncture has developed latent syphilis in the subjects of the hereditary disease, and a healthy child vaccinated from a vesicle thus produced will probably become syphilitic. The precautions necessary to the elimination of all risk of communicating syphilis by vaccination are carefully stated by the author.—(P. 53.)

The treatment of the hard chancre, discussed in the seventh chapter (p. 83), involves an important question—whether it is possible to prevent the development of the disease by removing the induration either with the knife or scissors or by caustics. Mr. Cooper decides peremptorily in the negative:—

"My own views may be summed up by stating, once for all, that I place no reliance whatever either in excising an indurated sore or in

attempting to destroy it by any cauterant. My firm belief is that the induration is the local manifestation of the constitutional infection, which would continue to develop itself even if it were possible to remove every vestige of the so-called primary lesion. The induration, in my opinion, is a symptom of the previous and complete contamination of the system."

It follows that no sore presenting any trace of induration should be cauterised.

It will be sufficient to mention the obsolete opinion, briefly discussed on page 180, that the lesions of bone commonly attributed to syphilis are really due to mercury, or to mercury and syphilis combined. It admits of no question that the most formidable syphilitic diseases of bone are found in cases in which no mercury has been exhibited. The bone affections, moreover, which mercury does produce are exclusively caries or necrosis of the maxillary bones, the disease beginning in the mucous membrane, and extending thence to the periosteum.

We transcribe in full the passage in which the connexion between syphilis and locomotor ataxy is examined:—

"The majority of authors who have written on nervous diseases regard syphilis as a frequent cause of locomotor ataxy. Some, indeed, go so far as to say that fifty per cent. of the cases of the latter affection are essentially due to syphilis. It is confessed, however, that the lesion in locomotor ataxy is very different from those which are ordinarily due to syphilis. 'It is a degeneration limited to a system of structure, and contrasts with the random distribution of ordinary syphilitic processes.' It is, however, remarkable that in one hundred consecutive cases of locomotor ataxy treated by Erb, only twelve presented no history of a chancre or secondary syphilis. M. Fournier believes that syphilis is the cause of tabes in a large majority of cases. He refers to the frequency with which the diseases are found to be associated; to the almost exclusive development of ataxia in the tertiary period; to the frequent similarity or identity of ataxic symptoms with those long known to be characteristic of syphilis; to the beneficial influence often exercised by anti-syphilitic treatment; and, lastly, to the impossibility, in many cases, of finding any other imaginable cause for the production of the disease. It may, on the other hand, be alleged that in ataxia neither diffused nor circumscribed gummatous formations, nor any appearance characteristic of syphilis, are found on *post-mortem* examination. Besides this, the character of the symptoms is much more distinct and peculiar than in nervous affections, admitted to be of syphilitic origin; and some authorities, Leyden amongst the number, deny that there is any ætiological connexion between syphilis and locomotor ataxy. It may be that syphilis, by lowering the tone of

the nervous system in general, is, in some cases, an indirect cause of tabes."—(P. 243.)

Should the subject of syphilis marry? This question has been fully treated by Fournier, whose five conditions, which should be fulfilled before marriage is justifiable, are stated in the text. The author's "general rule" is that, in the absence of visible external lesions, "marriage is permissible, provided that three years have elapsed since infection, and that during two years the patient has been subjected to careful and systematic treatment."

On the subject of the prevention of syphilis, to which the twenty seventh chapter is devoted, Mr. Cooper's trumpet gives no uncertain sound. In an earlier page of the volume he remarks that "England, deservedly, has the credit of preserving syphilis and pheasants better than any other country. The practical repeal of the Contagious Diseases Act, recently effected by a vote of the House of Commons, in servile obedience to the demands of an ignorant and fanatical section of the populace, will, no doubt, further aid the spread of syphilis." We quote some figures from the note concluding the chapter, which convey the experience of the medical officer of the Brixton Military Prison, Mr. Parker Wilson, as to the efficacy of the Act for the protection of the soldier—and his posterity. Since 1st January, 1884, 342 prisoners were admitted, of whom 23·1 per cent. were suffering from venereal disease. In 1882 the percentage was 2·9; in 1883, during part of which the Act was in abeyance, the rate rose to 4·5. Not only has the number of cases increased, but "the *character* of the disease, which had become modified, is beginning to assume its old virulent type."

We shall conclude this short notice with the author's statement of his views "with regard to syphilis and the soft venereal ulcer:"—

"1. The disease known as syphilis is due to the action of a specific virus, a pathological agent, separate and distinct from every other animal poison, and never originating *de novo*.

"2. The soft venereal ulcer (pseudo-syphilis) is due to the action of irritating secretions, which, so far from being identical with the poison of syphilis, are altogether different and distinct from it. Such an ulcer may, and frequently does, arise *de novo* from inoculation of the products of inflammation, and may then be transmitted from one individual to another.

"3. The virus of syphilis may be commingled with the secretions of a pseudo-syphilitic sore, or with secretions which, by themselves, would cause such a sore. In either case the resulting ulceration would possess double properties, evidences of which would, sooner or later, be exhibited."—(P. 43.)

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Vol. V.—Flaccus–Hearth. Washington: Government Printing Office. 1884. Quarto. Pp. 1,055.

We welcome the appearance of this, the fifth, volume of a splendid work, to which attention has been drawn, on more than one occasion, in the pages of this Journal.

The present volume of the Index-Catalogue includes 15,555 author-titles, representing 5,755 volumes and 12,596 pamphlets. It also includes 8,069 subject-titles of separate books and pamphlets, and 34,127 titles of articles in periodicals.

In the five volumes now published are included 50,986 author-titles, representing 30,722 volumes and 40,075 pamphlets; and also 49,552 subject-titles of separate books and pamphlets, with no less than 183,864 titles of articles in periodicals.

Surgeon J. S. Billings, U. S. Army, is again to be congratulated on the progress made in bringing out so extensive a work.

West African Hygiene. By Charles Scovell Grant, M.B., Dubl.; M.K.Q.C.P. Published, for the Government of the Cape Coast Colony, by Edward Stanford, London. Second Edition. 1884. Crown 8vo. Pp. 51.

The Colony, under the auspices of whose Government this little manual has been published, has been popularly known as the "White Man's Grave;" but there is no doubt that many of those who have met an untimely fate there have owed it to their own imprudence. No greater service could be rendered by the medical profession than to place in the hands of every European going to this dangerous spot a handy little book, like the one we now notice, which could be perused in a few hours, and which would tell the stranger what he ought to eat, to drink, and to avoid. The language is plain and untechnical, and the recommendations are such as every experienced physician will endorse. We see that quinine is recommended as a preventive and curative of intermittent fever in preference to arsenic, as recently advised by Tommasi Crudeli; and we believe that quinine is better. The author's remarks upon clothing are very sound; and our own experience of warm climates confirms them. Equally commendable are his recommendations of total abstinence from alcohol, or, at least, of the greatest moderation in stimulants; and his directions as to the general maintainance of the health are

sound and plain. We observe that the book has attained a second edition: there will be further editions of it. It ought to be in the hands of every European inhabitant of the West Coast of Africa; and, if its recommendations were carried out, that coast would acquire a bettèr sanitary character. We take note of the author's recommendation of rubbing lime juice into the body as a preventive and curative of "prickly heat." Having suffered severely from that most exasperating little malady, we tender our acknowledgments for this simple hint.

Lectures on Cataract. By R. BRUDENELL CARTER, F.R.C.S. London: Macmillan & Co. 1884. 8vo, pp. 83.

DR. CARTER has added one more to the monographs on cataract which have this year been given to the world. In his preface he states that "the Lectures which compose this volume, having been delivered before the Medical Society of London, are published at the request of the Society." They comprise the three Lettsomian Lectures for 1884, and are written in the easy, readable style which makes all Dr. Carter's writings pleasant; moreover, the volume is got up in a manner calculated to produce a most favourable impression. The first chapter treats more of the historic part of the subject, and traces chronologically the various modifications through which the methods passed, and the relative merits of each. Chapter II. is on the "maturity" of cataract, and weighs the various risks and advantages of performing extraction early or late, and enumerates the conditions which justify early operation, and the methods of procedure. In the third chapter he treats of the accidents incidental to early operation, and discusses the merits of Mooren's method. He advocates most strongly the use of anæsthetics, and believes that "the improved methods of operating are mainly due to anæsthetics, and would not have been brought to their present perfection without them." He paints in enthusiastic terms the advantages of anæsthetics, and mentions only one case where the anæsthetic caused injury to the eye by inducing vomiting after the extraction. We cannot, in this matter, quite agree with Dr. Carter; the advantage of having the patient conscious and under his own control are, in most cases, matters of far more importance than Dr. Carter admits, and the example set for many years by the Dublin School of ophthalmology is now being largely followed in England, and anæsthetics are being less and less used in most of the ophthalmic hospitals.

Although Dr. Carter does not, we presume, pretend to give any but the most important modifications which have been made in the method of operating since von Graëfe's death, still we are surprised to find no mention made of Knapp's or Förster's method of opening the capsule, or of Förster's method of artifically ripening immature cataracts. The lectures seem to be more a reflection of the author's opinions and practice than a complete dissertation, and as such are well worthy of being read. We felt in reading them that we were reading the author's real opinions, and not a compilation of facts.

Six Introductory Lectures, delivered in the Medical Department of the Owens College, Manchester. Manchester: J. C. Cornish. 1884. Crown 8vo. Pp. 150.

THESE lectures are not of the usual "Introductory" type, but are rather to be regarded as short essays upon interesting professional subjects; and we have perused them with interest and profit. They are all good; but we would particularly single out that of Dr. Thorburn, "On Female Education in its Physiological Aspects," in which the lecturer shows the injurious effects produced by study-pressure and competitive examinations upon young girls approaching puberty. This thoughtful essay throws a flood of light upon the reasons of the ill effects which the Intermediate Education System has had upon so many young girls, and the reasons why it has had, in so many instances, to be given up. Dr. Ransome's lecture "On the Infectiousness of Tubercle" is very good; and the same observation applies to Dr. Mould's "Observations upon the present Humane Plan of Treating the Insane." The non-restraint system may be caried too far, and we recently observed in a daily paper an account of a moor in Scotland being taken for the purpose of indulging insane patients in the amusement of shooting grouse. We trust that the grouse alone will be shot at, and that no human big game will suffer. Dr. Leech's lecture "On the Relation of Pharmacology to Therapeutics" is good; and so is that of Dr. Asby "On the Physiology and Pathology of Childhood." Dr. Cullingworth's remarks "On the Methods of Judicial Administration in the Past" will cause in the reader a thrill of gratitude that he does not live in those good old times. In Dr. Leech's Address (p. 62) we observe the following statement:—"It became usual to precede receipts by a symbol of the planet under whose reign the ingredients were to be collected. The letter R, which commences our prescriptions,

is a relict of the astrological symbol of Jupiter"—viz., ♃. This view is certainly corroborated by the presence of a stroke across the tail of the "℞"—thus, "℞," but there can be no doubt that R really stands for "recipe," just as the terminal M does for "misce;" and the popular term for a prescription, "a recipe," would appear to favour this idea.

Lessons in Domestic Science. By F. M. GALLAHER. Dublin: Browne & Nolan. 1884. Crown 8vo. Pp. 243.

THE author of this most useful and practical little volume justly observes that "originality of observation occupies necessarily but little space in a book on Domestic Economy;" and proceeds to give a compilation of all the best works which treat of health, food, sanitation, or house management in all its branches. This task the author accomplishes in the most admirable manner, and, in language the most simple and clear, explains every subject which the individual requires to know for the preservation of health, or which is useful to the head of a family in managing a household. There is nothing in the book that will be new to the educated physician; but, equally, there is nothing with which the physician will have to find fault. The work would be an admirable one for school instruction. If the rising generation could be thus made to master its contents, they would see the dangers of many habits which are now indulged in to the great detriment of health. The work does not profess to make "everyone his own doctor;" but rather to show people how to avoid the occasions of illness, or, when illness comes, how to nurse the patient, and carry out the doctor's orders. The chapters on food, on clothing, on baths, on house-furnishing, on cookery for adults, on cookery for children and infants, on house-cleaning, and on washing of clothes, are all admirable—in fact, the volume is a complete repertory of domestic knowledge. In domestic economy there are numbers of pieces of management which are followed as matters of routine; here the reasons of every one of them are given. These "Lessons in Domestic Science" ought to be read by every mother of a family, and, in fact, by everyone who desires to conduct their *menage*, be it large or small, with efficiency combined with economy. It is, in our opinion, the best book on the subject for popular readers; and, in this point of view, we cannot speak of it too highly.

What to do in Cases of Poisoning. By WILLIAM MURRELL, M.D., F.R.C.P. Fourth Edition. London: H. K. Lewis. 12mo. Pp. 212.

A WORK which has reached its fourth edition can hardly be forwarded by the reviewer's praise, and may be considered independent of his censure. We merely note the fact that this popular volume has been a good deal enlarged, but not beyond a size easy for carrying in the pocket. The old admirable ease of reference is preserved, and, with its aid, there need be no difficulty in diagnosticating what poison has been employed, or in determining what ought to be done in the way of remedy. With it and the antidote bag the physician is, as far as poisons are concerned, *factus ad unguem.*

RECENT WORKS ON URINE TESTING.

On Bedside Urine Testing; including Quantitative Albumen and Sugar. By G. OLIVER, M.D., Lond. Second Edition. London: H. K. Lewis. 1884. Pp. 128.

On the Various Modes of Testing for Albumen and Sugar in the Urine. Two Lectures by G. JOHNSON, M.D. London: Smith, Elder, & Co. 1884. Pp. 54.

WE may conveniently notice together these two publications, which have opportunely appeared at a time when increased attention is being rightly paid to the chemical examination of urine as a daily routine of clinical duty. Less than two years ago it occurred to Dr. Oliver that urinary examination at the bedside might be facilitated by the use of test-papers. He applied this idea first to qualitative testing only; but, encouraged by the success of his experiments, he continued his inquiries, and now brings forward quantitative methods for the estimation of albumen and sugar by means of suitable test-papers. These test-papers have been received with a good deal of favour by the profession, and they indubitably possess the advantages of cleanliness and portability. The principle of the quantitative determination of albumen consists in precipitating the urine by one of the test-papers, and then comparing the opacity thus produced with that afforded by a standard. If the opacity yielded by the albuminous urine is in excess of that of the standard, it is equalised by adding a known volume of water.

The standard of comparison is furnished either (*a*) by a precipitate of aluminium hydrate contained in a flattened test-tube, or (*b*) by a piece of opaque glass of exactly the required degree of opacity (viz., corresponding to $\frac{1}{10}$ per cent. of albumen), and the comparison is effected by viewing print or lines ruled on a card through the urinary albuminous precipitate side by side with one of the standards. The quantitative urinary test-tube should, of course, have exactly the same dimensions as the standard tube. As a unit of reference Dr. Oliver recommends the potassio-mercuric-iodide test-paper with citric acid, which yields a definite opacity, corresponding to the standard of glass, with urine which contains $\frac{1}{10}$ per cent. of albumen. Therefore, *e.g.*, if, in a given case, it were found necessary to increase by dilution the volume of the urine five times to bring it to the standard opacity with this test-paper, the amount of albumen would be 0·5 per cent.

As a rule, albuminous urines contain less than 1 per cent. From a clinical point of view, however, we are disposed to agree with Dr. Johnson that the *amount* of albumen present in urine is sufficiently expressed by the terminology in common use.

The author's method for the quantitative determination of sugar is based upon the decolorisation of indigo-carmine by glucose, step by step, through a definite series of colour changes, and upon the rapidity with which these changes take place. After a careful perusal of the author's statements, and some trial of his method, we must confess to having strong doubts as to the soundness and practicability of this plan, but have not space to criticise it in detail. Dr. Oliver's work is the result of much close personal observation, and we commend his labours to the attention of clinical teachers.

A number of typographical errors await correction in the next edition.

Dr. Johnson's little book is cast in the form of two Lectures. The first lecture is principally occupied with an exposition of the advantages claimed for picric acid as a delicate qualitative test for albumen. The second lecture is mainly devoted to a detailed account of the use of picric acid and potash as a test for sugar, qualitatively and quantitatively. Dr. Johnson is satisfied that after having been the subject of much hostile criticism, the value of the test for both purposes has been completely established.

The deep red colour-reaction of picrate of potassium with glucose was observed by Braun nearly twenty years ago, and was proposed

by him as a test for grape sugar, but the fact seems to have remained unutilised until Dr. Johnson rediscovered it.

The details of the process must be studied in Dr. Johnson's own words, and we will content ourselves with calling attention to but one statement. As the result of a large number of experiments he finds that *normal* urine almost invariably gives results with the picro-potassic test indicative of the presence of sugar (or some nearly allied substance) in the proportion of about 0·6 gr. to the fluid ounce. These lectures will repay perusal, and are written in a pleasing and attractive style.

Notes on Materia Medica and Pharmacy. By F. T. Roberts, M.D., B.Sc., F.R.C.P. London: H. K. Lewis. 1884.

Like most teachers, Dr. Roberts has felt the impossibility of attempting to teach the whole range of Materia Medica and Therapeutics in a single course of lectures. Being desirous of devoting, in future, the entire course to Therapeutics, he has prepared these "Notes" as a summary of the main facts in Materia Medica and Pharmacy which students are expected to know, and which they can readily make up for themselves. The book follows very much the same lines as Dr. Handsel Griffiths' work on "Materia Medica," edited by Dr. Duffey, but it is more condensed; and some of the tables, with which it bristles, are scarcely so instructively arranged as those in Dr. Griffiths' work.

Histological Notes for the Use of Medical Students. By W. Horscroft Waters, M.A. Manchester and London. 1884. Pp. 65.

In his preface the author thus defines the object of his work:—

"These Notes are by no means intended as a full description of the histological structure of the tissues, neither are they given for the instruction of the student in the various methods of section-cutting, injection, &c., but simply to aid him in his examination of specimens."

For this the Notes may be found useful, although we think the directions and descriptions are too brief to be very serviceable, unless supplemented by a great deal of *vivâ voce* instruction on the part of the demonstrator.

We think furthermore that some of the author's methods will

not work. For instance, we are told to leave the long bone of a dog in 0·5 per cent. chromic acid for about twelve days, till it is soft and cuts easily. We have never seen such a result as this brought about in twelve days. We are also somewhat surprised to learn that the students of Owens' College are not taught any practical histological work. Not only are they not made to prepare the tissues and cut their own sections, but they are not even expected to stain and clear the sections for mounting.

Caffain bei Herzkrankheiten. Von PROFESSOR D. FRANZ RIEGEL. Wiesbaden: J. F. Bergmann. 1884. Pp. 38.

THIS paper is a reprint from the "Transactions of the Third Congress for Internal Medicine," 1884.

The conclusions at which the author arrives are as follows:—

1. Caffein is to be classed with digitalis as a regulator of the heart and a diuretic.

2. Caffein, employed in suitable dose and administered in proper form, increases the force of the heart, slows its action, and raises the arterial blood pressure. These results follow speedily on the administration of the drug.

3. Caffein causes rapidly an increased flow of urine.

4. The indications for the administration of caffein are the same generally as those which indicate digitalis.

5. Caffein is best given in repeated small doses. In general, 1 to 1·5 gram of one of the double salts of caffein per diem is sufficient. It is better, however, to begin with smaller doses.

6. Caffein differs from digitalis in producing its effects more rapidly, and in having no cumulative action.

7. Caffein is often active when digitalis fails. It should always be tried in such cases.

8. Narcotics, specially morphia, should not be combined with caffein, which, itself restoring compensation, is the best narcotic.

9. Caffein, specially the easily soluble double salts (caffein natro-benzoicum, natro-salicylicum, and natro-cinnamylicum), are, in general, better borne than is digitalis. Caffein natro-cinnamylicum, in consequence of its ready solubility, is very suitable for hypodermic injection.

The paper is illustrated by cases, and has appended to it five plates, giving pulse-curves and showing the effects of caffein on the excretion of urine and the rate of the heart-beat.

Atlas of Portraits of Diseases of the Skin. New Sydenham Society. Fasciculus XVII. 1884.

We are here presented with three interesting and well-executed drawings—viz., Syphilitic Tubercular Lupus, surely a confusing mode of nomenclature; Inherited Syphilis, representing lesions on the face, buttocks, and scrotum; and Pemphigus Foliaceus, as occurring on the face and chest of a woman. This last form of eruption is a very rare but distinct variety or phase of pemphigus, of which we have seen but one case.

The Extra Pharmacopœia of Unofficial Drugs, &c. By W. Martindale, F.C.S., and W. Wynn Westcott, M.B., Lond. Third Edition. London: H. K. Lewis. 1884. Pp. 330.

It is scarcely necessary to bring this useful little work before our readers, for it at once made its mark, and two large editions have been exhausted in less than a year. Under the headings of Perchloride of Mercury, Sanitas, Asthma Powders, Nitrite of Sodium Tablets, &c., additions have been made, including a score of new formulæ, and the Therapeutic Index has likewise been enlarged. The book is a model of compactness, and is full of valuable and almost indispensable information.

TREATMENT OF LEG ULCERS.

Dr. Roberts has recently had excellent results in chronic ulcers of the legs, after sprinkling powdered chloride of sodium thickly over the surface of the ulcer, once every three or four days, and dressing the sores twice daily with corrosive sublimate ointment. The ointment contains half a grain of the mercuric chloride to the ounce of cerate. Chronic ulcers with callous edges are often most expeditiously treated by the surgeon excising them by means of an elliptical incision, and closing the wound with sutures.—*Polyclinic.*

PRURITUS ANI

And the distressing itching of urticaria and mosquito bites can be much alleviated by local applications of menthol. It may be used by rubbing the menthol pencil lightly over the surface, or by dissolving a small amount in alcohol and bathing the part.—*Polyclinic.*

PART III.

HALF-YEARLY REPORTS.

REPORT ON SURGERY.

By William Thomson, M.A., F.R.C.S.; Surgeon to the Richmond Hospital, Dublin; General Secretary to the Academy of Medicine in Ireland.

THE DRAINAGE OF ABSCESS CAVITIES IN THE BRAIN.

In the *American Journal of Medical Sciences*, July, 1884, Drs. Christian Fenger and E. W. Lee, of Chicago, contribute a joint paper on this very interesting subject. Similar cases have been reported from time to time during many years, with occasional successes, but the advances made under the safeguards of antiseptic surgery point to a more frequent interference of the surgeon in such conditions, and promise better results than we have yet had. The greater power we now possess of being able to localise pathological changes in the cerebral centres increases also the range within which surgical art may be utilised, and with these favourable conditions we may expect to find the brain made the subject of operation with success as surprising, at least, as that which has attended operations upon the peritoneal cavity.

The patient, in the case reported, was a policeman, who was shot above the left eyebrow while attempting to arrest a prisoner. He fell immediately, but he was able to get up in about a minute, walk up and down the room, and get into a wagon for removal to his home. A probe showed that the margin of the orbit had been fractured, and the track of the bullet could be traced upwards and outwards for 2 cm., where a hard body was lodged beneath the skin. This was cut down upon and a piece of lead extracted. In 40 hours the patient had intense headache and pain in the orbit. He vomited once. He had now some exophthalmos, and there was loss of vision. The fracture was exposed, some bone taken away, and a small abscess in the orbit evacuated. A month after the injury he was able to leave the house, but he soon felt faint,

and had to return home. A day later he became drowsy, with a pulse of 54, and finally comatose. The temperature was normal. There was no paralysis.

The intercranial pressure thus indicated might be due to—(1) an abscess between the cranium and dura mater; (2) to an acute meningitis; (3) to an abscess of the brain. In the opinion of his attendants the normal state of temperature pointed rather to abscess than to meningitis. Under the circumstances trephining was determined upon. The trephine employed had a diameter of 17 mm. Its lower border was placed 2 cm. above the supraorbital margin, in order to be sure of avoiding the frontal sinus; its outer border 4 cm. to the left side of the median line; and its outer border 1 cm. to the inner side of the linea semicircularis. The piece of bone removed presented no fracture, and was perfectly healthy. The underlying dura mater was of normal colour, but tense, so as to protrude into the trephine opening. No distinct pulsations were visible. A crucial incision was made in the dura mater, but no pus was met with between it and the arachnoid. The arachnoid and pia mater presented their normal colour, and there was no trace of meningitic exudation. A hypodermic needle, attached to an ordinary hypodermic syringe, was now used to make a succession of exploratory punctures. It was first pushed towards the orbit, whence nothing was withdrawn but a little blood and *débris* of brain substance. It was then introduced successively in a horizontal backward, inward, and outward direction, the result remaining the same. A longer needle was now used, and was entered in a direction backwards, slightly inwards, and perhaps a trifle upwards. On reaching a depth of 2–2½ inches the syringe filled with a thin, palish red, and semi-transparent fluid. It emitted a peculiar odour, not distinctly fœtid, and somewhat phosphorescent. The needle was pushed in a second time, with the same result. The needle was now used as a guide along which the closed blades of a narrow operating forceps were pushed, and were then withdrawn. On separating the blades of the forceps 1 to 1½ ounces of the above described fluid spurted out with some force, followed by at least a teaspoonful of thick yellow pus. A drainage-tube, 8 mm. in diameter, was then introduced and lay within the dura mater to the extent of 8 cm. An antiseptic dressing was applied. The external wound and drainage-tubes were dusted over with iodoform, and the patient was put to bed. The wound was dressed twice a day. A week afterwards the patient was again

relapsing into a semi-comatose condition, and it was determined to make another search for matter. The needle was again introduced in various directions to the depth of 3 inches, and finally towards the old cavity, when half a teaspoonful of thick yellow pus was withdrawn. A tube was again inserted, the wound gradually closed, and the patient was able to leave the house in about five weeks. A fortnight later he resumed duty as a policeman. Memory and speech and all faculties of the brain were as good as ever. Three months later (in July) he had three epileptic fits, and in December another. In March, 1884, a fistula formed over the trephine hole, discharging from five to ten drops of pus in the twenty-four hours.

The authors believe that in the search for pus the object of multiple trephining can be attained with greater ease and safety by exploratory puncture and aspiration. This procedure is not new. In 1867 Rentz published a case in which a cerebral abscess was aspirated twice a day for six weeks with a hypodermic syringe. In three weeks the symptoms of pressure had disappeared. A relapse followed, and for six more the aspirations were continued. The case recovered perfectly. J. W. Hulke (*Med. Chir. Trans.*, Vol. LXII., 1879) reports a case in which he passed a fine trocar into the brain substance, found pus, and then opened the abscess with a knife. The longitudinal sinus was wounded, but was closed by suture and ligature. The patient's life was saved, but he remained blind.

The authors recommend a needle four inches long. Rentz advises that the trocar should have a rounded instead of an ordinary cutting point. Division of small blood-vessels may be thereby avoided. Drs. Fenger and Lee recommend that the puncture should be made at distances of half an inch or an inch from each other, and that the needle should be pushed in straight.

The wash employed in this case was boracic acid, but on one occasion they were compelled to use carbolic acid, and the change was apparently followed by good results.

REMOVAL OF A GLIOMATOUS TUMOUR FROM THE BRAIN.

The progress of surgery is further exemplified by a very remarkable case, of which at present only brief notes have been published (*Med. Times and Gaz.*, Nov. 29, 1884). The patient was under the care of Dr. Hughes Bennett, at the hospital for epilepsy and paralysis, London. The chief symptoms were paroxysmal twitchings of the left side of the face, alternating with

twitchings of the arm on the same side, followed by slowly progressive paralysis of the hand, and later on by twitchings of the eyelids and legs without paralysis. There were also double optic neuritis and violent headache. Dr. Bennett diagnosed a tumour of limited size, and localised it in the upper part of the fissure of Rolando. Mr. Rickard Godlee consented to operate, and trephined the skull over the corresponding spot. An incision was made in the ascending frontal convolution, and a quarter of an inch below the surface a tumour of the size of a walnut was discovered and removed. This is believed to be the first operation of the kind performed. The case was doing well according to the last report.

In connexion with this and similar cases the reporter recommends a very valuable paper by Dr. Robert W. Reid, Lecturer on Anatomy at St. Thomas's Hospital, London, on "The Relation of the Principal Fissures and Convolutions of the Cerebrum to the Outer Surface of the Scalp" (*Lancet*, Feb. 27, 1884).

A PLEA FOR MORE HEROIC INTERFERENCE IN SURGICAL AFFECTIONS OF THE BRAIN.

At the New York Academy of Medicine (*Phil. Med. Times*, June 28, 1884) Dr. R. W. Amidon read a paper with this title, in which he supported his plea by a review of statistics given by Walsham and others, and a collection of cases which he had made in which trephining or similar operations had been performed since 1879. Walsham gave over six hundred cases in which the trephine had been used, and of this number over four hundred patients died. Walsham's analysis of the cases, however, showed that only ten and six-tenths per cent. of the deaths could be assigned to the operation itself, and Dr. Amidon thought that this was even too great an estimate of this cause of mortality in the list. The cases which he had collected, occurring since 1879, amounted to one hundred, and were not selected. He thought that from these data we could arrive at pretty conclusive evidence as to the mortality of the operation *per se*, as looked at in the light of modern surgery. Of the hundred cases, twenty-six died, and, of the twenty-six, twenty-three presented at the time of the operation symptoms endangering life, thus leaving only three cases in which the fatal issue could even be remotely traced to the operation. This certainly should rob the operation of its terrors. He related three cases which went to show how extensive injury of the cranial bones might take place and the patient still recover.

It would seem, from statistics quoted, that opening of the dura mater had led to a fatal issue in plus thirty-nine per cent. of the cases; but, if it were remembered that in these cases there was usually laceration of the brain, hæmorrhage, or the introduction of a foreign body for exploratory purposes, it would readily be seen that the cause of death could not be traced to opening the dura mater during the operation in all of these cases. On the contrary it had been shown that this procedure had not been the direct cause of death in more than seven and six-tenths per cent.

The author then considered how much foundation there was for the sacredness in which the cerebrum was usually held, and related several modern cases in which extensive injury of the brain had taken place and yet recovery followed. He briefly referred to the case of Dr. Fluhrer, not yet published, in which a young man shot himself in the forehead, the ball passing back to near the lambdoidal suture. The wound was probed; a counter-opening was made on the posterior portion of the skull, at the supposed exit of the ball through the brain; the ball was found, removed, a drainage-tube introduced, passing from the anterior to the posterior opening in the skull, and the patient recovered, with a return of all his mental powers. "We must conclude," said the writer, "that the brain shows a remarkable tolerance of injury and remarkable reparative power."

Dr. Amidon then gave a brief review of the subject of cranial and cerebral topography, by which alone cerebral surgery could accomplish brilliant results. He said that neurologists were perfectly sure that there were certain regions of the brain which, when irritated, compressed, or destroyed, gave rise to perfectly unmistakable symptoms.

He recapitulated by saying that we have in trephining an operation which proves fatal in only three per cent. of published cases; the operation of opening the dura mater proves fatal in only seven and six-tenths per cent. We have in the brain an organ tolerant of injury, ready to take on reparative process; and we possess knowledge enabling us to tell when certain points of the brain are diseased, and also anatomical data enabling us to pierce the cranium and reach such diseased parts.

As to the operation itself, the substitution of the dental engine, with burr or drill, for the ordinary trephine struck him as advantageous. The dental engine enabled us to remove only as much of the cranial bones as was desired, and of any form desired, and it was specially useful in removing the edge of overriding bone and

allowing of the elevation of depressed fragments. The operation should always be done with precautions. We should try to secure only proximate coaptation of the flaps. Provide for the freest possible drainage. Use cold antiseptic dressings without much compression. He said without much compression, because in one of the cases reported compression produced serious symptoms, which, however, were only temporary. We should enjoin quiet in a posture to facilitate drainage. There should be simple diet and a slightly loose condition of the bowels. Should there be a rise of arterial tension and temperature, give jaborandi or aconite to the production of their physiological effect. Quinine and alcohol, if used, should be given only in tonic doses. An anodyne was often indicated, and it was his advice never to use opium or any of its preparations. To ease pain and quiet delirium, or to induce sleep, use hydrate of chloral in small and frequently-repeated doses—ten to fifteen grains every fifteen to twenty minutes—until its effect is produced. Quinine and alcohol in large doses, and opium in any doses, aggravate intracranial inflammation when present, and he thought they might excite it. These suggestions applied equally well or with still greater force in cases in which the dura mater or brain was accidentally or intentionally invaded.

He would advise the operation of trephining in every case of injury of the external vault, provided there were marked cerebral symptoms; in every case of compound fracture of the skull, whether there were visible depression or not, or cerebral symptoms or not; in cases in which, after the lapse of months or even of years, unmistakable cerebral symptoms follow injury of the head. In addition to the bone, the dura mater should be opened in all cases in which exploration with the hypodermic needle discloses products of purulent inflammation or a great deal of liquid blood underneath the dura; in all cases in which serious superficial lesion of the brain is suspected, but cannot be otherwise proved. In addition to the bone and dura mater, the brain should be explored delicately with a probe in all penetrating wounds of its substance—punctured, lacerated, or gunshot. Its mass should be invaded, even when superficially intact, by a fine, blunt, exploring needle, when the presence of a foreign body or of a hidden collection of pus is suspected, and extraction or evacuation should be made with delicate instruments. Theoretically, he thought that, in a case of neoplasm of the brain which had resisted medical treatment and continued to grow, threatening life, it should be excised, for the reason that

such growths were usually single, were surrounded by an inflammatory zone of demarcation, and always killed by pressure.

GERMS AND THE SPRAY.

The importance of the spray in surgical operations, and the rôle it plays in the prevention of putrefaction in wounds, is still matter for experiment and discussion. Last year Dr. Duncan, of Edinburgh, related some experiments which seemed to show that the spray did not exert its claimed influence to any marked extent, and Professor Chiene then promised that he would repeat the experiments in his laboratory, and report his results. This he has done in a short paper in the *Edinburgh Med. Journal* for August, 1884. The acid used was the pure crystalline phenol of Bowdler and Bickerdike. The carbolised vapour was 1 in 27—1 in 30 being regarded by authorities as sufficient to destroy organic life. The fluid used in the experiments was a half per cent. solution of Darby's fluid meat, sp. gr. 1002, which forms a clear and highly refractile medium, which is peculiarly capable of maintaining the growth of organisms, and which gives a distinct cloudy reaction when infection occurs. It was first filtered, and then steamed (at 212° F.) in a steam sterilising apparatus devised by Koch, for 30 minutes on each of two consecutive days. The liquid thus prepared was decanted into glass beakers supplied with cotton wool plugs, the whole of which, with their plugs, had been previously sterilised by superheating in a hot-air chamber (320° F.) for one hour. To insure complete sterilisation of the charged beakers, and to obviate the risk of contamination which necessarily accompanied the decanting, the whole were next subjected to an additional thirty minutes' steaming on each of two successive days. All the beakers were now incubated for four days at a temperature of 95°-102° F., and under this incubation a proportion of the beakers became cloudy. These were rejected. Beakers of three sizes were used. Each experiment in the first and second series consisted in uncovering beakers of three sizes, and in the third and fourth series, beakers of one size only, respectively in and out of the spray for the same length of time, at a distance of three feet from the mouth of the spray. The plugs of the three spray beakers were suspended in the spray cloud; those of the non-spray beakers out of the spray, with their lower ends directed downwards, and covered by a cloth soaked in a one per cent. solution of mercuric chloride, to obviate, as far as possible, contamination through the natural

tendency of atmospheric germs to gravitate. The hands and arms of the manipulator, and every other object which even approached the area of the experiment, were carefully disinfected by soaking in the same solution. Of 40 beakers exposed *out* of the spray 38 became turbid; the two which remained clear being of the smallest size—one inch in diameter. Of 40 exposed *in* the spray 38 remained clear, and the two which became cloudy were of the largest size—$3\frac{1}{4}$ in. As compared with Dr. Duncan's results, the case may be stated thus, as it is not possible to reproduce the diagram here:—Mr. Chiene's experiments: in spray, 5 per cent. became clouded; Dr. Duncan's, 37 per cent. Mr. Chiene's experiment: out of spray, 95 per cent. became clouded; Dr. Duncan's 42 per cent.

The results obtained in these experiments may be explained on one of four suppositions—(1) the purity of the atmosphere; (2) the mechanical action of the spray displacing and driving away the causes of putrefaction from the mouth of the beaker; (3) the chemical action of the condensed carbolic acid solution from the spray, which falls into the beaker and renders its contents incapable of supporting life; (4) the germicide action of the spray vapour, which mixes with the air at the mouth of the beaker and destroys the vitality of the germs suspended in it. The first hypothesis at once falls to the ground, for the results of the control experiments with flesh exposed outside the spray show that the experimenter had to deal with a densely germ-laden atmosphere, and it could only be tenable under such circumstances as those obtained by Tyndall in his experiments with glacier air, which he found to be totally germless. The mechanical theory falls to the ground when it is remembered that sprays of salicylic acid and boric acids have been found ineffectual. The chemical theory is strongly opposed by Dr. Duncan, who states that, in his experiments, the amount of carbolic acid which fell into the beakers may be left out of account, as it did not prevent the majority of them becoming septic. In addition, there is authority of Miquel for stating that a solution of less than 1 in 31 will not prevent putrefaction. A series of experiments was performed with reference to this point, and it was found that in the largest beakers ($3\frac{1}{4}$ in.) enough carbolic acid found entrance in the course of 30 minutes to bring up the strength of the solution in the beaker to 1 in 3,000. Can such a weak solution have any effect on the putrescibility of the solution? or are the effects due to the destructive power of the spray acting directly on

the organisms? Mr. Chiene is now occupied in an attempt to solve this rather intricate problem. The use or disuse of the spray may or may not be justified on other grounds; but it certainly cannot rest on the results brought forward by Dr. Duncan.

RESECTION OF THE CHEST WALL AND LUNG.

In the *Berlin. klin. Wochenschrift*, No. 9, 1884 (*Ed. Journal*, July, 1884), Krönlein, of Zurich, gives a report of a remarkable case, in which he successfully resected several ribs, and removed a portion of the lung, for recurrent sarcoma. The patient was a girl, who suffered from a tumour about the size of a child's head, solidly fixed to the sixth rib on the left side, in the axillary line. Three and a half inches of the rib were resected, and the costal pleura was unwounded. Healing took place by first intention, and the patient was discharged in eight days. The growth returned, and a second operation was performed in five months. After the skin had been removed from the swelling it was seen to fill the space which had been left by the former resection. The free ends of the sixth rib were lost in the tumour, which extended also to the fifth and seventh rib, and not only involved the whole wall of the thorax, exclusive of the pleura, but also projected into the pleural cavity, to the size of a small fist. There was, therefore, nothing else to be done than to remove the chest wall, between the fifth and seventh ribs, in a space equal to the palm of the hand. This free opening into the pleural cavity revealed the lower lobe of the lung and its pleura, adherent to the tumour. The adhesions were separated without much bleeding, whereupon the whole lung collapsed. The whole retracted lung, the exposed pericardium, and the left half of the diaphragm were now visible. In the lung itself, close to its under-border, a sarcoma the size of a walnut was present. This was seized with a forceps, drawn into the wound, and, together with a zone of healthy tissue, removed by scissors. The edges of the lung wound were united by catgut sutures, the pleural cavity was washed out with a one-third per cent. salicylic solution, the large skin-wound brought together with numerous sutures, two drainage-tubes were inserted into the cavity, and the whole was bandaged with iodoform gauze and salicylic wool. Only four dressings were necessary, and the patient left in four weeks, well. The lung recovered its expansion, and respirations were normal on the fourteenth day.

ERYSIPELAS INOCULATION.

In *Centralblatt für Chirurgie* (*Ed. Med. Jour.*, Nov., 1884) Professors Janicke and Neisser relate the results of an inoculation of erysipelas virus in a case of carcinoma mammæ, upon which operation was impossible. A particle of erysipelas virus about the size of a pin's head, from a pure culture prepared by Dr. Fehleison, was rubbed into a freshly-scarified spot on the surface of the morbid growth. On the evening of the same day the temperature was 40·2° C., and next morning 40·6° C. Almost the whole of the left pectoral region was now erysipelatous, and by evening the right side was also involved. The temperature had risen to 41° C., and the pulse was 116. On the three following days the morbid process spread over the entire breast and abdomen, the right arm, and part of the neck. The temperature fell somewhat, but the pulse-rate increased, and the patient died collapsed on the fourth day. As to the effect of the inoculation upon the neoplasm, it was found that a cancer nodule (gland), the size of a hazel-nut, under the clavicle, softened on the second day, and had completely disappeared on the fourth. The side was found occupied by connective tissue and serous fluid. The whole mass was softened in consistence and diminished in size. Masses of erysipelas-cocci were found to have infiltrated the whole tumour mass, bringing about in many cases a dissolution of the cancer nests, and completely filling all the lymphatic spaces. The cancer cells and nests were perishing before the advance of the erysipelas-cocci.

FRACTURED PATELLA.

In the *Deutsche medicinal Zeitung*, July 21, 1884 (*Practitioner*, December, 1884), Van der Meuller describes his method of treating fracture of the patella. In the clot which forms between the fragments, he observes that the anterior and posterior surfaces are the first organised, and only after some time does this process involve the deeper portions. From ten to twenty days after the injury he operates. An incision is made over the patella, and the anterior layer of pseudo-membrane exposed. This and the unorganised clot lying underneath are removed; but the posterior membrane is not interfered with, and the joint is thus not opened. The fragments are then sutured with silver or platinum wires, care being taken not to include the membrane of organised coagulum, but it is made to fold itself posteriorly towards the joint cavity. The author has obtained firm union in three cases on which he has operated,

LAPAROTOMY FOR GUNSHOT WOUND OF THE STOMACH.

Professor Kocher, of Berne (*Brit. Med. Jour.*, July 12, 1884), has recently had an opportunity of putting into practice the doctrines taught by the late Marion Sims shortly before his death. A boy, aged fourteen, was admitted to hospital having received, half an hour previously, a wound in the region of the stomach from a pistol-shot fired from a distance of five paces. He was pale, and complained of abdominal pain; the abdomen was swollen and dull on percussion inferiorly. A quarter of an hour later hiccough, severe epigastric pain, vomiting, pallor, and symptoms of collapse came on. There was tympanitic resonance from the ensiform cartilage to the umbilicus, with complete dulness from the navel downwards and in the flanks; the slightest percussion caused severe pain. Three hours after the injury laparotomy was performed. On opening the abdominal cavity in the region of the navel a great quantity of dark blood escaped. The bullet wound was discovered with comparative ease—it was situated on the anterior surface of the stomach towards the greater curvature, in the direction of the fundus. The wound was circular, with sharp edges, and about half an inch in diameter. The bullet could not be found, nor was there any aperture of exit. The edges of the hole were united, first with two catgut ligatures, like an ordinary wound, and then a continuous silk suture was applied for a distance of about an inch, so as to invert the serous coat around the wound. Recovery was retarded by an abscess which formed in the track of the sutures in the abdominal wound.

ANTISEPTICS IN ABDOMINAL SURGERY.

At the International Medieal Congress, at Copenhagen, Prof. Mickulicz read a paper upon this subject (*Amer. Med. Journ.*, October, 1884). He pointed out that antiseptics are as necessary in laparotomy as in other bloody operations, though the technical execution differs materially in some points. This depends upon the peculiar character of the peritoneum, which partly lessens the task of antisepsis and partly increases it. The peculiar characters of the peritoneum, regarded from the point of view of antisepsis, are:—

"1. The extent of its surface equal to that of the whole body. Hence the dangers of cooling by laying bare the peritoneum, and the danger of quick spreading of inflammatory and septic processes.

"2. Its great capacity for absorption and transudation; the first quickly leading to general sepsis in septic peritonitis, and preventing the collection of large quantities of secretion in the normal peritoneum.

"3. The capacity for forming plastic exudation, and of quickly forming agglutinations. Inflammatory deposits are thus localised, and ligatures and divided tissues become encapsuled; and thus the application of many ligatures is permitted.

"In regard to antisepsis in laparotomy it may be stated: 1. That the peritoneum is much more susceptible to infectious material than any other tissue. Hence we cannot use a powerful antiseptic, such as irrigation with carbolic acid, as in other wounds, since the rapid absorption much increases the danger of intoxication; further, that drainage, which is very useful in other operations, is useless in operations on the peritoneal cavity, and cannot avert the consequences of a possible infection, and may even be a source of danger. Perfect drainage of the peritoneal cavity is impossible on mechanical grounds; drainage after laparotomy operations should be used, therefore, only in exceptional cases. In already existing and circumscribed exudation it is always indicated. For these reasons the principal task in antisepsis in laparotomy lies in keeping infecting material from the peritoneum; and here lies the great difference between antisepsis in laparotomy and in other operations. Antisepsis in laparotomy is, therefore, principally prophylactic. Cleanliness and disinfection of everything which is in any way connected with the operation, field of operation, operator and assistants, sponges, instruments, &c., must be much more complete than for other operations, since we have here no means of correcting intercurrent faults in the antiseptic methods. In perfectly clean rooms the spray is entirely superfluous, though in hospitals it should be used for half an hour before the operation for mechanically purifying the air; during the operation, however, it is unnecessary. In operations on the stomach and intestines the absolute prevention of the escape of the contents of these viscera is a most important part of the antisepsis.

"2. Besides the direct infection during the operation (contact infection), spontaneous infection may also occur under certain circumstances. This occurs when a quantity of fresh secretion, especially of blood-serum, is collected in a pouch of the peritoneum without being quickly absorbed, and a "dead hole" (todter Raum) is formed. The second essential for antisepsis in laparotomy is to prevent the formation of a "dead hole." Every means which will lessen the secretion in or promote absorption from the peritoneal cavity is then a part of the antiseptic method in laparatomy. A perfect toilette of the peritoneum is above all things necessary; the avoidance of secreting wound surfaces in the peritoneum by different means, such as the use of many ligatures, cauterising the pedicle and adhesions, suturing of wound-surfaces, as of the broad ligament, or the stump of the uterus, as after Schroeder's operation for myomotomy, the removal of large intra- or retro-peritoneal tumours with subsequent suturing of the peritoneal surface into the abdominal wound, so that the whole wounded surface is removed from the peritoneal cavity. Especially dangerous are

large wound surfaces in the pelvic cavity. Furthermore, everything should be avoided which will irritate the peritoneum and cause extensive secretion, as, for example, irritation by strong antiseptics. In order to encourage absorption a bandage should be placed around the whole abdomen. This will also keep the abdomen still.

"As regards the material for the ligature, either catgut or disinfected silk may be used. So also, from the standpoint of antisepsis, it is indifferent whether the pedicle be treated inside of or without the peritoneum, as long as the abdominal cavity is completely closed. Nor is there much choice as regards the kind of suture used for closing the abdomen, if the peritoneal surface be kept clean. Any kind of dressing may be used for the abdominal wound provided no drainage tubes be carried into the abdomen; but a small strip of some antiseptic material is sufficient. For an antiseptic solution to be used in laparatomy, the carbolic solution seems to be the best and most certain. He thinks that iodoform in large quantities (especially more than ʒiss) is liable to cause intoxication. For this reason he uses it in very small quantities for dusting over the pedicle or the stump of the uterus.

COLOTOMY.

In the *American Journal of Med. Sciences*, October, 1884, Dr. W. Ridgway Batt gives a retrospect of the operation of colotomy, with a collection of 351 cases—154 were performed for malignant disease, 20 for fistula, 52 for imperforate anus, 40 for obstruction, 72 for stricture, 4 for ulceration, and 9 for miscellaneous causes. Of this number 215 recovered, or 62 per cent., while 132, or 38 proved fatal; the result in 4 cases being unrecorded. Of the 154 cases operated upon for malignant disease, 68·4 per cent. recovered; 48, or 31·6 per cent., were fatal. Following Amussat's method were 124 cases, of which 91, or 73·5 per cent., recovered, and 33, or 26·5 per cent., were fatal. According to Littre's method, there were 23 cases, with 12, or 54·6 per cent., recovering, and 11, or 45·4 per cent., which proved fatal. Of 4 cases following Callisen's method, all proved fatal. Of the 40 operations for obstruction, 19, or 47·5 per cent., recovered; 19 were fatal, and the result in 2 cases was not reported. Of the 72 cases operated upon for stricture, 41, or 57·1 per cent., recovered, and 31, or 42·9 per cent., ended fatally. Of the 4 operations for ulceration, 3 terminated in recovery, and 1 in death. Of the 9 cases operated upon for various causes, 5 recovered, and 4 died.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ACADEMY OF MEDICINE IN IRELAND.

President—J. T. Banks, M.D.
General Secretary—W. Thomson, M.D.

PATHOLOGICAL SECTION.

President—A. W. Foot, M.D.
Sectional Secretary—P. S. Abraham, F.R.C.S.I.

Opening Meeting, Friday, Nov. 7, 1884.

The President in the Chair.

Inaugural Address.

The President delivered an interesting and suggestive inaugural address on the cultivation of general pathology.

Intussusception of the Small Intestine.

Mr. Kendal Franks read a paper on a case of intussusception of the small intestine, which had occurred in a man under his care. Some of the symptoms of that affection were present, but, on the whole, the diagnosis was most obscure. An exploratory abdominal incision was determined on. An intussusception measuring eleven inches in length was found in the right iliac region, and various methods of reduction were attempted, but without success for a considerable time. Part of the gut was almost gangrenous, and the peritoneum had given way in places. These had to be sutured. The patient died a few hours after the operation. The chief points of interest in the specimen exhibited were, in the author's opinion—(1) the seat of the intussusception in the small intestine far above the ileo-cæcal valve; (2) the difficulty of diagnosis; and (3) the question of operation in reference to adhesions.

The President remarked that perhaps the difficulty of reducing the

tumour after it had been exposed was that the natural process of cure had set in, and adhesions between the surfaces of the entering and the returning cylinders were being effected. Possibly if it had been left alone a little longer the natural process of suppuration and sloughing would have ensued.

Dr. Henry Kennedy observed that any cases of intussusception which he had seen had been invariably chronic in adults and acute in children. He had lately had a case which began with extremely acute symptoms, and yet after five weeks a *post-mortem* showed that the intussusception must have been of three or four years' duration. He had seen six cases of the affection, and they all commenced at night, and, as a general rule, the patients had eaten something out of the way for supper, such as cockles with porter, a salt herring with buttermilk, &c. Having regard to the safety with which the once formidable operation of opening the abdomen was now performed, he thought that cases of this sort should be surgically met infinitely more early than they had been.

Dr. Corley thought it would have been well if Mr. Franks' case had come into his hands sooner than it did.

Professor Bennett noticed that several of the injections were followed by hæmorrhage. He had often dealt with cases of intestinal obstruction, and had got them well under by the use of enemata, and he had not known the bleeding to occur after the enema, except in cases where there was an intussusception.

Dr. Walter Smith said the diagnosis of intussusception was extremely difficult, and they should be thankful for all the light that they could get on the subject. The author of the communication had stated that he had inferred an obstruction in the small intestine from the occurrence of indican in the urine. If that conclusion were justified, it would be a great help to diagnosis; but he did not think their knowledge of physiological chemistry as regards this point was as yet sufficient to establish a definite relation between intestinal obstruction of the small intestine and the formation of indican. Immense quantities of indigo were found in the urine in cases in which there was no intestinal obstruction. He had found it to occur in cases of pleuritis, and in one case of peritonitis which came under his observation the urine was almost blue-black, and yielded a magnificent deposit with chloroform.

Mr. Franks, in reply, did not think any spontaneous cure had commenced in his case. At the place where the intussusception took place there were no signs of lymph at all, and if sloughing had taken place it would have been only a sign that the patient was a stage nearer the grave. In the two cases of which he had spoken the symptoms were diametrically opposite. The case which turned out to be chronic had the rigidity of the abdominal muscles and peristalsis, while the acute case had the distension of the abdomen and no peristalsis. The black hæmorrhage in

the case which was the subject of his communication might have come from cirrhosis of the liver, as the person was known to be an alcoholist.

Tumour in the Hypogastric Region.

Mr. Wheeler exhibited and described a tumour which occurred in the hypogastric region of a female, aged nineteen. She was of a fair and ruddy complexion. The tumour was firmly fixed in the region of the pubes, the superior portion of it being rather movable. There was an enlarged gland in the groin, and on the surface of the tumour was a fungating mass. The tumour had grown within a period of thirteen months, and the patient was admitted into the City of Dublin Hospital in the end of last July. An examination with the sound proved that the uterus was perfectly free, and that perhaps the bladder was free also, although there was not so much certainty as to the latter. There were no constitutional symptoms, the temperature and pulse being normal. She had no sweating, she eat well, and her excretions were healthy. The tumour was excised by means of two lateral excisions. A large hæmorrhage took place, which did not appear to proceed from blood-vessels, but from sinuses within the tumour which sprung from the pubes and lay on the peritoneum. There was no difficulty in removing it, beginning from above downwards, there being but one point of attachment, which was not wider than the first joint of his finger, and the attachment was not to the bone, but to the periosteum of the pubes. In his opinion, the tumour was of the sarcomatous class. It weighed 10 lbs. 6 ozs. Dr. Abraham had found it to be a spindle-celled sarcoma. Neither the bladder nor the peritoneum was engaged. Such a tumour had not been found before in females. The patient died within four or five weeks after the operation.

Dr. FitzGibbon said he was present at the operation, and its expediency was concurred in by all who saw it. No doubt was entertained as to the malignant character of the tumour. The process of removal was comparatively easy until the deep attachment of the pubes was reached, and then there was considerable difficulty. He believed the hæmorrhage which then occurred was the cause of the subsequent collapse of the patient. Mr. Wheeler removed the tumour without opening the peritoneal cavity or inflicting any necessarily fatal injury on the patient, who, no doubt, died from the shock of the operation.

Dr. MacSwiney asked might not an Esmarch bandage be used to prevent hæmorrhage in such a case?

Dr. Abraham said he had made a cursory examination that morning of the tissue of the tumour and the gland. Both showed a sarcomatous structure. The section of the gland showed typical spindle-cells—that of the tumour cells of various kinds, including spindle-cells. He wished that the specimen should go to the Committee of Reference.

Dr. Evelyn Little asked how it was that a tumour which, according to Mr. Wheeler's description, started from behind all the muscles of the abdomen, and which only adhered to the front of the pubes, did not perforate the abdominal parietes?

Mr. Wheeler, in reply, said the tumour did not grow from the front of the pubes, but from behind the recti muscles. The gland, when fresh, had a very different appearance from the tumour, being then like a healthy kidney. As to the character of the tumour, it was sufficient to know that it was a sarcoma; and as to the form of the cells, he believed the opinion of the highest authorities was that it depended on pressure as to whether they were spindle-shaped, or what shape they took. An Esmarch bandage was applied to the girl's leg. He did not think it was from loss of blood she died.

Aortic Aneurysm.

Mr. Lentaigne exhibited a specimen of an aortic aneurysm. It was of a small size, and occurred in one of the sinuses, and was taken from the body of a man who died suddenly in a Turkish bath. About ten minutes after he had left the hot room, and whilst dressing himself, he was heard sighing, and the attendant, on opening the curtain, found that he was dead. The pericardium was intensely distended with blood, and there was a considerable amount of atheroma and some alteration in the walls of the heart. The only lesion was the aneurysm, which was very small—about the size of a hazel-nut. Inside the aorta the commencement of another small aneurysm could be seen. The aneurysms first commenced by the breaking down of the atheromatous mass. The fellow-lodgers of the deceased stated that he never complained of anything being wrong with his chest. There was a very slight excoriation over the site of the aneurysm, which he thought might have resulted from a blister, but such proved not to be the case.

The Section then adjourned.

Friday, December 5th, 1884.

The President in the Chair.

Heart Disease.

Surgeon-Major Hamilton made the following communication:—A soldier of fine physique, aged thirty, was admitted to the Portobello Hospital, complaining of palpitation. He had been for some time employed on police work, and he knew that his heart was affected. There was extreme precordial dulness; a well-marked systolic bruit at apex and over base; a loud systolic and regurgitant bruit. His condition remained

the same for about a month, when anasarca set in, rapidly increasing. He sat up one night against orders, and died almost immediately. *Post mortem*:—The viscera, with the exception of the heart, were all found healthy, but the serous cavities and cellular tissue contained much fluid. The heart, enormously enlarged, weighed 1 lb. 12 oz. Mr. Abraham examined it, and thus described it:—All the cavities dilated, and the walls hypertrophied. The inner surface of the pulmonary artery was of a remarkably deep purple colour. The principal lesion is seen in the aorta and its valve. Large bulging patches of atheroma, not calcified, exist in the ascending arch, and between the openings of the coronary arteries a large, rough, calcareous nodule projects opposite the junction of the anterior and left posterior segments of the valve, which are here confluent; and at this point of the valve is a wide, irregular opening, admitting a large finger. The rest of the valve is more or less thickened and frayed, and an ulcerated spot is to be seen on the ventricular surface. Just below the nodule a cavity 2 cm. wide and 1 cm. deep extending below the bottom of the sinus, behind the endocardium, and into the muscular substance of the heart.

Dr. Henry Kennedy remarked that great contrasts were afforded by the different durations of these cases. The one in question had run an exceedingly rapid course. Seven years ago a young man, having a well-marked rheumatic diathesis and who had had rheumatic fever, consulted him. He had extensive disease of the aortic valves. From that time to the present, the youth, now aged only twenty-two, had constantly hunted, and he had only recently been forbidden to do so.

Mr. Abraham called attention to the microscopic preparations of the specimens which were exhibited.

Notes of a Case of Osteoma.

Mr. Arthur Baker read the notes of a case in which he had removed from the left side of the upper jaw of a lady a small osteoma. The fact that such growths rarely occur in situations where diagnosis is attended with difficulty made the case interesting, since it was impossible, before removal, to tell that the growth in question was not a buried tooth or an odontoma, springing as it did from the site of the first left upper molar tooth. The case was further complicated by the existence of a cyst near the front of the jaw, combined with absence of the permanent canine tooth. The tumour on section showed lacunæ disposed irregularly round the vascular canals, which penetrated its substance for some distance. Near the periphery, however, some lacunæ were seen arranged in parallel rows. The communication was illustrated by a cast of the mouths and some etchings of the microscopic and macroscopic appearances of this growth.

The President remarked that this was the first communication

connected with dental pathology received in the Section, and there were several points in it of surgical interest.

Cancerous Stricture of the Sigmoid Flexure of the Rectum.

Dr. Quinlan submitted a case of cancerous stricture in the sigmoid flexure of the rectum. A woman, aged forty-seven, in a state of great prostration and partial collapse, was admitted into St. Vincent's Hospital. Her abdomen was enormously distended, her bowels not having been relieved for eleven days. A turpentine enema was administered, but came away without effect. On examining the rectum, he thought he perceived a tumour, but it was beyond the reach of his fingers. A great distension of the abdomen prevented an exact diagnosis, and treatment was altogether directed to getting the bowels to act, and to keep down pain. Some vomiting was quickly relieved. On the third day, she sat up vomiting and fell back dead. At the *post mortem* the body was found emaciated and bloodless. The small intestines were enormously distended with gas. The descending colon was full of fæces. At the sigmoid flexure the cause of the obstruction was found to be a cancerous mass of a malignant character. Beneath the rectum was a peculiar structure affected by malignant disease. Mr. Abraham had pronounced the tumour to be an infiltrating adenoma caseating in parts.

Dr. Biggar asked had cancerous formation occurred in any other part?

Dr. Henry Kennedy cited a London writer as laying down that out of every 100 cases of malignant carcinoma, caseous degeneration occurred in four.

Strangulated Hernia.

Mr. O'Grady exhibited a case of strangulation within a hernial sac, the specimen being from the body of a man, aged thirty-three. The hernia came down in the morning. He was admitted into hospital at one o'clock. The symptoms being urgent, he was operated on at five. When the sac was exposed a tense stricture appeared at the external rim. The intestine, a little highly coloured, could be seen through the sac. The hernia was reduced without opening the sac. For two days after the operation, with the exception of two attacks of vomiting, which were relieved, he was free from the usual symptoms. On the third day stomach-sickness with pain returned, and he died next day, eighty-seven hours after the operation. The question of when internal strangulation occurred was of interest. It was not tight, and the gaseous contents of the intestine could be passed backwards and forwards. Another question was the expediency of operation without opening the sac. This case did not exhibit such symptoms as to indicate that course, yet events showed that, had the sac been opened, he might have recovered.

Calculus removed from one of the Tonsils.

Mr. F. A. Nixon exhibited a hard calculus removed from one of the tonsils of a gentleman who complained of a slight obstruction of his throat. Being in the habit of singing, he complained of the obstruction. Both tonsils were considerably enlarged. Detecting a small white speck, the probe elicited a metallic ring. Having failed to grasp the mass with instruments, he enucleated it with his finger. The greater portion was up behind the soft palate. There was considerable hæmorrhage.

Professor Bennett said the specimen was of great rarity, and moved that it be submitted to the Committee of Reference to ascertain its constitution. It indicated articulation either with another calculus or adjoining bone.

Mr. Corbett thought the formation was identical with the tartar that often formed about neglected teeth resulting from constitutional disposition. He had seen several teeth blocked together by it even in young mouths.

Mr. Nixon, in reply, said the gentleman's tonsils were very large, and were not atrophied. The calculus was similar to the tartar formation on teeth. The facet was observable. The teeth were black and had a good deal of tartar. The gentleman was a great smoker.

Mammary Tumour.

The Secretary (Mr. Abraham), for Mr. J. K. Barton, exhibited a large mammary tumour removed at the Adelaide Hospital from a girl aged twelve. Her grandmother had died of recurring cancer of the breast. One brother was now suffering from Pott's caries. The other near relatives were well. The girl's general health had been good, and there was no history of injury to the breast. Three months ago a small lump was observed in the left breast, which increased steadily, being at first painful. Mr. Abraham reported the consistence of the tumour to be soft, homogeneous, and elastic, the cut surface bulging, and the whole easily peelable out from the surrounding encapsulating tissue. The microscopic sections exhibited enlarged glandular alveoli lined with proliferating epithelium and separated by thick septa principally made of embryonic and spindle-shaped cells, resembling some form of sarcoma. He regarded the growth as a form of adenoma with cellular hyperplasia of the interalveolar tissue, and he suggested its reference for further examination to the Committee of Reference. The specimen was, on the motion of Mr. Abraham, seconded by Professor Bennett, referred to the Committee, Professor Bennett observing that last year he himself showed a tumour of a character usually regarded as being sarcoma of the breast, about 14 lbs. weight; but though its removal was effected in a complete manner, tumours recurred in six months in the axilla, in the neck, and in every direction, some being as big as a man's head.

Lung Disease in a Lion.

Mr. Abraham exhibited the left lung of the old lion which had been born in the Zoological Gardens, had lived there twelve years, and recently died. The father of the lion had been also born there, and the animal in question had had good health till the 1st of October last, when there was a sudden snap of cold weather. The lion refused food, seemed feverish and thirsty, and his respiration became exceedingly rapid. He appeared to have pleurisy, his chest being fixed, and his breathing abdominal. An attempt to administer medicine failed. He took little food except occasionally, although everything tempting was offered. He drank some nitre in water with diuretic effect. He had no cough, but two or three times he spat out mucous, which towards the end became bloody. Ultimately he became terribly emaciated and died. His viscera were healthy except the lungs. There was no sign of pleurisy, but the lungs were extremely diseased, mottled in appearance, and hard and lumpy to the touch. On section they presented a curious honeycombed aspect. The bronchial tubes were enormously enlarged. In the lower lobe of the left lung was a large cavity. The microscopic sections of various parts of the lung did not show the structure of tubercle, nor did one of the bronchial glands. He was not sure what the disease was. The father of the lion died in precisely the same way. It was remarkable that, notwithstanding the enormous disease in the lungs, the animal had no cough.

Mr. Baker remarked that lung disease was common among cats, which frequently suffered like the lion in question.

The President observed that monkeys were subject to consumption. In the lion's lungs exhibited he had no doubt the cavity existed for years, and a small amount of cold sufficed to kill one of the large carnivora. The lion in question had chronic disease of the lungs, and would be therefore doubly susceptible to pneumonia.

Mr. Abraham said that long ago Dr. Haughton discovered that tubercular phthisis was not so common in monkeys as was generally thought, and he showed it in a paper read many years ago before the old Pathological Society. In a paper read before the Zoological Society of London, Dr. Sutton recently came to the same conclusion.

The Section adjourned.

SURGICAL SECTION.

President—E. H. Bennett, M.D., F.R.C.S.I.
Sectional Secretary—William Stokes, F.R.C.S.I.

Opening Meeting, Friday, November 14, 1884.

The President in the Chair.

The Inaugural Address.

The President delivered an inaugural address. [It will be found at page 11.]

Excision of the Rectum.

Dr. Ball read a paper on a case of melanotic sarcoma of the rectum removed by operation. The patient, a fairly healthy-looking woman, aged sixty, stated that eleven months before coming under observation she had noticed a pile, which had been removed by operation, after which she remained free from rectal symptoms for four months. She then suffered from increased difficulty in evacuating the bowels. A slight discharge of bloody mucus appeared, and she became conscious of a hard tumour in the rectum, which partly protruded at stool. These symptoms continued to increase, and on admission defecation was difficult and painful, the pain being referred to a point immediately above the symphysis pubis. Upon examination the anus appeared normal and the sphincter was not unduly relaxed. About an inch from the anal verge, on the anterior aspect of the rectum, two distinct and tolerably hard tumours could be felt, evidently implicating the mucous membrane, and by pressing the finger well up the superior limits of both could be readily made out, and below them a smaller mass was to be felt. The rest of the rectum appeared healthy, and no abnormal adhesion of the bowel to the other pelvic viscera was indicated. The mass was extirpated by the usual method on November 1—a free posterior incision being made to give room. Corrosive sublimate solution (1–2,000) was the antiseptic used, and the wound was left open. The after-progress of the case was febrile and satisfactory. The bowels moved for the first time on the fourth day, and the patient had complete control over the evacuations. The piece removed measured about 3 inches in breadth and $2\frac{1}{2}$ inches in height, and consisted of the anterior two-thirds of the circumference of the bowel. There were two principal growths, separated by about half an inch of mucous membrane, and equi-distant from the anus. The larger had a depression in the centre, and was of a whitish colour; the other was black on the surface, and spherical in shape. Below the two principal tumours a smaller nodule, also black in colour, was to be seen. A section carried through the two larger growths showed that

the lighter coloured one was of the same colour throughout, except where a small blood-clot existed in the interior; but the second was of a sooty, black colour, as seen in section. Mr. Abraham had kindly made a careful microscopic examination of the specimen. Sections were made through the entire thickness of the tumour and also of the rectal wall between them. It was found that the muscular coat of the bowel was not encroached upon by the growths, and the only portion of mucous membrane left on the surface was in the sulcus of the larger tumour before referred to. Here, however, there did not appear to be the slightest evidence of proliferation of the glandular elements. It was difficult to determine the tissue in which the neoplasm originated, but it appeared to be more intimately connected with the submucosa. The shape and arrangement of cells was similar in both tumours, being of a typical sarcoma. The cells are round, ovoid, or even spindle-shaped, with large nuclei, and in some portions resembling a form of alveolar sarcoma. In the larger one there is a very slight amount of pigment, but in the smaller pigmentation is extreme, some of the cells appearing as large masses of blackish material, while others have dark granules more sparsely scattered in their substance. In the portion of mucous membrane between the two growths the glands are much atrophied and surrounded with lymphoid tissue. Primary melanotic growths were of extreme rarity in this region of the human subject, although, as pointed out by Virchow, the disease is not uncommon in the horse. In the cases collected by M. Nepveu only five instances were recorded in which a microscopic examination had been made, and in each the disease was stated to be scarcoma. He discussed the operative treatment of malignant disease of the rectum, both palliative and so-called radical.

Mr. Croly mentioned that he had had under his care a considerable number of cases of cancer of the rectum. In the majority of these cases pain had not been absent. About a fortnight ago he performed lumbar colotomy on a man whose disease until then had not been diagnosticated, although his suffering was great. The situation of the disease accounts for the presence or absence of pain; for instance, when the diseased mass went towards the bladder, it gave rise to greater disturbance than if it went backwards towards the hollow of the sacrum. His present patient, who had endured pain for eighteen months, said he had not half so much pain since as he had before the operation. With regard to operative treatment, cases for colotomy formed one group, and those for excision of the rectum another. Where the finger could not be got above the diseased mass excision was hazardous, and the fact ought to be put before the patient that if the disease extended high up excision was attended with considerable risk, while colotomy was merely a palliative operation.

Dr. Purefoy, having had under observation during the past three

or four years two or three cases of malignant disease, referred to one of them as being interesting in respect of the locality of the pain. About eighteen months ago an unmarried middle-aged lady consulted him for a very distressing pain in the left hip, and said she felt a hard lump close to the anus. After careful examination, and as he was about to give up in despair, on making deep, firm pressure close to the anus in the left ischial fossa, his finger impinged on a hard nodule. He found the whole tube of the gut occluded by large, hard nodules situated in the ball of the gut, and projecting considerably into the vagina. She made no complaint of pain on defecation. Her sister had died of malignant disease in the same part of the body. There being no difficulty in the passing of the fæces, he did not suggest colotomy. About a month or six weeks afterwards the recto-vaginal septum became perforated, the fæces escaped, and the patient died in three months. The interesting point was her complaint of pain in the left hip, extending down the leg.

Mr. Hamilton said the insidious nature of cancer of the rectum was such that it might go on for a considerable time without developing symptoms or attracting attention to the real nature of the disease, and hence so many cases were treated for obstinate constipation of the bowels and even for urinary trouble, because of the close sympathy of the bladder in the early stages of the disease. The cases justifying excision of the rectum were few in number, taking into account the health and age of the patient and the extent of the disease. Linear rectotomy was probably more desirable than colotomy. The apparatus Dr. Ball used was superior to anything else for supporting the buttocks and giving a view of the parts, but, instead of pressing on the neck, he had himself modified its application by passing it under the arms, the patient's hands being secured to the central bar by wristlets.

Dr. Henry Kennedy pointed out that extensive disease might go on in the uterus without any suffering, while small disease would be attended with great pain.

Mr. Thomson held that if they could perform an operation which would remove, at least for some years, a disease like cancer, it would be not only of the greatest possible advantage, but an advance in surgery to boast of. There were, however, at least two dangers—one, a very severe stricture occurring at the orifice in the anus, and the other incontinence of fæces, either of which left the patient almost as bad as before. It was only removing the position of the stricture to take it from a couple of inches up the bowel and place it at the very orifice, added to which there was the horrible condition of incontinence. He preferred colotomy to linear incision or to the method of scooping, neither of which he considered to be of a surgical character. In return for enlarging the opening of the rectum and removing the obstruction to the

passing of the fæces, what was given was a wounded surface, the base of a mass of malignant disease. In scooping out also, the whole of the disease was not removed, and a wounded or bruised surface, sarcomatous or whatever it might be, remained for the fæces to pass over it. No doubt, colotomy had the disadvantage of being merely palliative. The true lines were laid down by the surgeon who advocated the complete division of the colon, suturing the lower end of the upper part of it to the wound in the abdomen, inverting the upper end of the rectum into this, stitching the walls together, and finally removing the part altogether.

Mr. Wheeler believed he was correct in saying that the author of the paper had stated the case which he had operated on was not yet healed, but he did not gather that it was advocated to scoop or break down the cancerous masses in the rectum. Malgaigne was about the first who advocated this treatment to relieve obstruction. It was, however, a line of treatment to be neither advocated nor practised. He had not himself had experience of excision of the rectum, but he had of the operation of colotomy, which gave relief to the sufferer from cancerous disease, and probably delayed the progress of the malady by lessening irritation.

Mr. W. Thornley Stoker observed that there were two kinds of pain in connexion with cancer of the rectum—a pain inherent in and peculiar to cancer, and a pain attended with the development of cancer to such an extent as to cause obstruction of the bowel. There was but little, if any, pain until the disease caused obstruction.

Dr. Ball replied.

The Section adjourned.

MEDICAL SECTION.

President—F. R. Cruise, M.D., President and Fellow, King and Queen's College of Physicians.

Sectional Secretary—A. N. Montgomery, M.K.Q.C.P.

Friday, November 21, 1884.

The President in the Chair.

The President's Address.

The President, having congratulated the Academy on its highly satisfactory position, entered upon the discussion of some of the relations existing between medicine and law, pointing out their frequently unsatisfactory nature. [The Address will be found at page 1.]

Lupus and its Treatment.

Dr. Walter G. Smith read a communication on the various forms of lupus, which he illustrated by plates.

On the motion of Dr. Banks, seconded by Dr. Gordon, the discussion on Dr. Walter G. Smith's paper was postponed to next meeting, in order to give Dr. Bernard, of Londonderry, an opportunity of reading a communication.

Case of Anuria.

Dr. Walter Bernard, of Londonderry, related the clinical history and exhibited the morbid specimens of a case of prolonged anuria occurring in a man, aged seventy-five years. [It will be found at page 18.]

The President said this was the first time he had heard of total suppression of urine lasting eleven days without immediate fatal results. It was difficult to understand how it could have taken place for such a length of time without uræmic poisoning.

Mr. Abraham observed that the microscopic specimens were the most beautiful he had seen for some time of morbid growths in the bladder and prostate. As regards the origin of the growths he would scarcely venture an opinion. There were several cells and nests of cells, which were extremely similar to the cells of the epithelium of the bladder. He agreed with the remark as to the extreme rarity of carcinoma of the prostate. Indeed, having seen a large number of tumours, he had only come across a single case, which had occurred in the practice of Mr. Martin.

Dr. Finny expressed his satisfaction with Dr. Bernard's remarkable paper. The pathological conditions to which he had alluded were of great rarity. The clinical aspect of the case was also unique—that suppression of urine could exist for so many days without remarkable symptoms. The explanation that it must have been from some nerve cause was likely to be the true one. Where complete suppression of urine took place head symptoms were extremely rare, but urinary fever and uræmic poisoning were not. In the absence of pathological change to account for the suppression of urine so many days, they must look to a nerve origin.

Dr. Henry Kennedy, referring to the duration of the anuria, said he had, in cases of cholera, frequently seen patients recover after four days, and once after five days, and the recovery was apparently due to the vomiting. Even when the primary symptoms of cholera had subsided the vomiting went on, and the patients recovered; so that vomiting seemed to be a vicarious effort on the part of the system to keep life going. He did not know there was any connexion between the malignant disease and the anuria. Any cases he had seen were not connected with malignant disease, and the case under consideration was in that respect uncommonly remarkable.

Dr. Bernard having briefly replied,

The Section adjourned.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, M.D., F.K.Q.C.P., F. R. Met. Soc.

Vital Statistics

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, November 29, 1884.

Towns	Population in 1884	Births Registered	Deaths Registered			Deaths from Seven Zymotic Diseases							Deaths from Phthisis	Death-rate per 1,000	
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa		From all causes	From seven Zymotics
Dublin, -	351,014	767	830	145	171	–	4	45	3	15	19	19	91	30·8	4·0
Belfast, -	216,622	519	461	84	98	–	1	22	7	12	20	16	57	27·7	4·7
Cork, -	80,124	196	170	20	53	–	–	1	1	4	–	6	14	27·6	2·0
Limerick,-	38,562	74	86	10	27	–	–	3	–	–	1	1	15	29·3	1·7
Derry, -	29,162	72	45	6	9	–	–	3	–	1	–	–	5	20·0	1·8
Waterford,	22,457	62	60	11	21	–	–	4	–	–	1	-	7	34·7	2·9
Galway, -	15,471	31	33	8	12	–	2	–	–	–	–	3	–	27·7	4·2
Newry, -	14,808	32	29	1	8	–	–	3	-	–	–	–	2	25·5	2·6

Remarks.

In the eight selected towns included in the foregoing Table the highest death-rates are 34·7 per 1,000 of the population annually in Waterford, 30·8 in Dublin, 29·3 in Limerick, and 27·7 in Belfast and Galway; the lowest rates are 20·0 in Derry, 25·5 in Newry, and 27·6 in Cork. The rate of mortality from seven chief zymotics ranged from 4·7 per 1,000 per annum in Belfast, 4·2 in Galway, 4·0 in Dublin, 2·9 in Waterford, 2·6 in Newry, 2·0 in Cork, and 1·8 in Derry, to 1·7 in Limerick.

The recorded deaths represent a rate per 1,000 of the population annually of 21·7 in twenty-eight large English towns (including London, in which the rate was 20·3), 27·9 in the sixteen chief towns of Ireland, 29·4 in Glasgow, and 20·3 in Edinburgh. There is again an increase (from 20·6 to 21·7) in the mortality in the English towns generally; and in London it has also risen decidedly—from 18·9 to 20·3 per 1,000 per annum. It has risen considerably in Glasgow (from 25·6 to 29·4); and although still moderate it has risen in Edinburgh likewise (from 18·2 to 20·3). In the Irish towns the rate of mortality has risen greatly—from 22·6 in the previous four weeks to 27·9. If the deaths (num-

bering 21) of persons admitted into public institutions from localities outside the Dublin Registration District are deducted, the death-rate of that district becomes 30·0, while that of the portion of the district included within the municipal boundary is 33·1. In London the epidemic of smallpox unfortunately shows much vitality—the deaths were 164, against 97, 52, 61, 97, 185, 155, 85, and 46 in the eight preceding periods respectively. The deaths from diarrhœal diseases in the same city, which numbered 1,519, 836, 272, and 154, in the four preceding periods of four weeks, fell still further to 63.

Acute febrile zymotics were returned as the cause of death in 116 instances in the Dublin district, compared with 118, 158, 206, 99, 76, 62, 84, 82, 71, and 72 in the ten preceding periods of four weeks each, and a ten-years' average of 115·0 in the corresponding period. The 116 deaths included 45 from scarlet fever, 19 from "fever," 15 from whooping-cough, 19 from diarrhœal diseases, and 3 compared with only 1 death in the preceding period from diphtheria. The epidemic of scarlet fever still continues to display a disquieting vitality, the deaths being 7 more than in the previous four weeks. Of the 45 fatal cases, 13 occurred in the South City Districts, 15 in the North City Districts, 15 in the Donnybrook (Pembroke Township) District, and 2 in that of Blackrock. Of the 19 deaths referred to "fever," 9 were ascribed to enteric fever and 6 to typhus, while in 4 instances the exact nature of the fever was either not specified or was ill-defined. The deaths from fever were 10 less than those registered (29) in the previous period. Twenty-four children under five years succumbed to scarlet fever, including 2 infants of less than twelve months. All the 15 victims of whooping-cough were under five years of age, including 5 infants of less than twelve months old. Among the 19 victims to diarrhœal diseases were 13 children under five years, and of these 7 had not reached the age of one year. No persons aged 60 years and upwards succumbed to diarrhœal diseases.

Measles caused 4 deaths in Dublin, 2 in Galway, and 1 death in Belfast.

Scarlet fever was fatal in 22 instances in Belfast, the deaths being 17, 15, 11, 6, 1, 5, 9, 9, 12, and 14 in the ten previous periods. The deaths from this disease fell from 5 to 3 in Derry. Diarrhœal diseases were credited with 45 deaths in the eight towns, against 72, 120, 207, 57, 14, 26, 24, 32, 24, and 28 in the ten previous periods of four weeks each. In London the weekly registered deaths from diarrhœal diseases were 22, 19, 15, and 7 respectively.

In the Dublin Registration District 767 births and 830 deaths were registered, compared with 743 births and 696 deaths in the previous four weeks. The births were those of 385 boys and 382 girls. The deaths of infants under one year rose from 128 to 145; those of persons aged 60 years and upwards fell from 179 to 171.

The deaths referred to pulmonary consumption in the eight towns were 191, compared with 158, 192, 182, 197, 243, 216, 244, 243, 212, 220, 189, 170, and 173 in the thirteen preceding periods of four weeks each. In Dublin diseases of the respiratory organs are stated to have caused 181 deaths, against 128, 94, 91, 64, 92, 108, 172, 155, 126, 157, 161, 185, and 165 in the thirteen preceding periods, and an average of 170·5 in the corresponding four weeks of the previous ten years. The 181 deaths included 120 from bronchitis (average = 117·8) and 37 from pneumonia (average = 27·1). Of the 120 persons who succumbed to bronchitis, 23 were infants under twelve months, whereas 31 had passed their sixtieth year.

On Saturday, November 29, 1884, there were under treatment in the principal Dublin hospitals no cases of smallpox, 9 cases of measles, 70 of scarlet fever, 24 of typhus, 31 of enteric fever, and 16 of pneumonia.

The mean temperature of the four weeks was 43·5° in Dublin, 43·8° in Belfast, 45·4° at Roche's Point, Co. Cork, 40·8° at Glasgow, 41·7° in Edinburgh, and 42·4° at Greenwich. The minimal readings of the thermometer in the screen were 31·1° in Dublin, 34° at Belfast, 33° at Cork, 23·5° at Glasgow, 28·2° in Edinburgh, and 30·7° at Greenwich. Very cold weather prevailed during the last fortnight of the period.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of November, 1884.

Mean Height of Barometer,	30·153 inches.
Maximal Height of Barometer (on 19th, at 9 a.m.),	30·711 ,,
Minimal Height of Barometer (on 4th, at 7 p.m.),	29·340 ,,
Mean Dry-bulb Temperature,	43·7°.
Mean Wet-bulb Temperature,	41·7°.
Mean Dew-point Temperature,	39·3°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·244 inch.
Mean Humidity,	85·2 per cent.
Highest Temperature in Shade (on 1st),	58·6°.
Lowest Temperature in Shade (on 16th),	31·1°.
Lowest Temperature on Grass (Radiation) (on 22nd),	27·0°.
Mean Amount of Cloud,	59·0 per cent.
Rainfall (on 14 days),	1·412 inches.
Greatest Daily Rainfall (on 1st),	·553 inch.
General Directions of Wind,	W., N.W.

Remarks.

At first unsettled and rainy, this month ultimately proved fine and quiet, and at the close cold and winterly. The mean temperature calculated from observations taken twice a day—at 9 a.m. and 9 p.m.—was

43·7°; that calculated by Kaemtz's formula from the means of the daily maxima and minima was 43·0°, or 0·7° below the average of the twenty years, 1865–84, inclusive. The arithmetical mean of the maximal and minimal readings was 43·9°. On the 1st the thermometers in the screen rose to 58·6°, on the 16th they fell to 31·1°; on the 22nd the minimum on the grass fell to 27·0°. The mean height of the barometer was considerably over the average—30·153 inches, compared with 29·850 inches. At 9 a.m. of the 19th the very high reading of 30·711 was recorded, while the lowest observed reading was 29·340 inches at 7 p.m. of the 4th. The rainfall amounted to 1·412 inches on 14 days, against a twenty years' average of 2·312 inches on 16·9 days. Included in the twenty years are five Novembers with a smaller rainfall than that of the present month—namely, 1867 (1·258 inches), 1870 (1·218 inches), 1871 (1·258 inches), 1878 (1·338 inches), and 1879 (1·251 inches). In 1867 there were only 8 rainy days in November. In the present month more than one-third of the entire rainfall (·553 inch) fell on the 1st. In Dublin a solar halo was seen on the 2nd, a lunar halo on the 29th. More or less fog was noted on the 6th, 16th, 17th, 18th, and 29th. Hail fell on the 5th and 21st, and a fall of snow occurred in the early morning of the 30th.

During the first week (1st–8th) the weather was unsettled, and rain fell in much larger quantities than for many weeks previously—the total quantity being 1·190 inches. The heavy rains on the 1st were connected with a curious "V"-shaped depression, which next morning lay over Scotland, the Irish Sea, and Wales. On the 6th a deep depression approached the S. of Ireland, subsequently travelling across this country towards N.N.E., reaching Lough Foyle on the morning of the 7th. It caused a continuous rainfall and a remarkable rise of temperature *at night*, to 56° in Dublin.

Almost throughout the second week conditions were anticyclonic in France, Belgium, Holland, and England; whereas Ireland, Scotland, and Scandinavia came from time to time under the influence of areas of low pressure travelling north-eastwards across the Atlantic and Norwegian Sea. In Dublin the weather was cloudy, and a little rain fell on Tuesday night, the 11th, when there was a heavy downpour of rain at the western stations—Valencia receiving 1·40 inches. Quiet, dry weather set in on the 13th, and at some inland stations sharp frost occurred at night. Thus, at Parsonstown the thermometer read 25° at 8 a.m. of the 14th, while in Dublin at 9 a.m. it was 47·6°, or nearly 23° warmer.

The week ending the 22nd was one of low temperature, but of scanty rainfall, with light to moderate and variable anticyclonic and polar winds. On the morning of the 19th the barometer stood above 30·70 inches over the greater part of Ireland. Meanwhile a depression had travelled southwards across the Baltic to Germany, bringing to Scan-

dinavia in its train the first severe frost of the season. From this time to the close of the month the north-westerly type of weather held in Western Europe, across which a series of depressions passed in a south-easterly direction. One of these systems caused strong N. or N.E. winds, or gales, and falls of cold rain, sleet and hail along the coasts of the North Sea, and to a less extent in most parts of the United Kingdom on the 21st.

The last week was cold and raw, with moderate N.W. winds, and cold showers towards the end. On the night of the 29th a lunar halo presaged bad weather, and on the 30th much snow or sleet fell over the greater part of the British Isles. In Dublin the ground was white in the early morning, but a rapid thaw and rain quickly succeeded the snow. On this day the thermometer sank to 14° at Aberdeen, not rising above 22° all day, but in the course of the ensuing night it reached 39° as a southerly breeze set in. There was very little frost near Dublin during the month, but inland it froze hard on several occasions.

Up to the 30th of November the rainfall in Dublin since January 1st had amounted only to 18·457 inches, distributed, however, over as many as 167 days.

PERISCOPE.

CONVALLARIA MAIALIS IN HEART DISEASE.

Dr. Bogojavolenski, of St. Petersburgh, has recently made a number of experiments as to the effect of convallaria when administered hypodermatically to frogs; it was observed that the heart's action became slower, and the ventricular systole more energetic. By increasing the dose an apparent state of tetanic contraction of the heart was caused, and during the toxic period the excitability of the pneumogastrics was exaggerated. In experiments on dogs he found that the number of cardiac contractions was lessened by irritation of the pneumogastrics, and afterwards that the pulse was accelerated by paralysis of the pneumogastrics. After quite an extensive trial of convallaria in cardiac cases, Bogojavolenski agrees with Sée, in the following indications for its use:—1. Palpitation resulting from a state of pneumogastric depression, or paralytic palpitation; simple arythmia with or without hypertrophy of the heart, and with or without lesions of the orifices and valves. 2. Mitral stenosis, especially when accompanied by a defect of compensation in the contractile force of the left auricle and ventricle; the sphygmographic tracings show that the contractile force is markedly increased. 3. In insufficiency at the mitral orifice it is especially valuable when pulmonary stasis is threatened, and

when dyspnœa occurs from the passive congestion, with or without nervous troubles of respiration. 4. In aortic insufficiency its favourable effects may be easily seen. It is especially indicated when there is not compensatory hypertrophy of the left ventricle; and it increases the force of the heart when it tends to become weak and dilated. 5. In cardiac dilatation, with or without hypertrophy, with or without cardiac degeneration or sclerosis of the muscular structure, it is indicated. 6. It is indicated in all cardiac affections in which there is a tendency to dropsy.—*Gaz. Med. di Torino*, and *Medical News*. [For valuable suggestions as to its use, see *The Amer. Journ. Med. Sci.*, Oct., 1884, p. 551.]

ETHER NARCOSIS PER RECTUM.

This method as a substitute for etherisation by the mouth appears to have been first suggested by Pirozoff ten years ago, and has recently been revived and advocated by Dr. Mollière, of Lyons. Although not likely to generally supersede the older method, yet as it is supposed to offer advantages in certain cases, especially in operations about the head and face, it is desirable to report careful observations upon this novel procedure with the view of settling as soon as possible the limits of its utility. Professor Starcke, at the June meeting of the Army Medical Society of Berlin, communicated a case in which he had successfully used this method in the operation of removing a submaxillary gland from a man. The ether was introduced rather high up into the rectum by means of a catheter. The catheter was connected with a tube springing from the upper part of a chemical wash bottle, in which 50 grms. of ether were placed. A second tube dipping into the ether was connected with an indiarubber hand-ball. The ether flask was dipped into a vessel of water at 50° C., or held over the water, if the ether boiled too quickly, and the current of ether could be quickened at will by an assistant pressing upon the hand-ball. Previous to the narcosis the patient received a subcutaneous injection of morphia 0·01 grm.). The amount of ether actually taken in by the patient was about 30 grm. Anæsthesia was complete in about ten minutes, without any troublesome excitement or screaming, and the pulse which at first rose to 106 in the minute, *afterwards sank to* 60. The operation was finished twenty-four minutes after the commencement of etherisation, but the patient did not rouse from sleep until twenty-five minutes after the conclusion of the operation—*i.e.*, nearly an hour from the beginning of the rectal injection. The *abdomen was remarkably distended* and unyielding to pressure, and the possible danger of undue pressure on the diaphragm from intestinal distension should not be forgotten. Professor Starcke incidentally comments on the slowing of the heart's action and the absence of all evidence of stimulation of that organ as pointing against the reputed value of hypodermic injections of ether in cases of failing cardiac action. Any

possible influence upon the heart by such means he would ascribe rather to reflex action and still more to psychical influences than to pharmacological causes. For the success of the method of ether injection *per rectum* a firm and intact sphincter ani appears to be an essential condition. At least, when this method was tried upon a young man with phimosis, who had a relaxed state of the mucous membrane of the rectum, when a certain degree of rectal tension was produced by the ether, no precautions or admonitions could restrain the patient from letting fly the contents of the bowel accompanied with every variety of noise (*Berliner klin. Wochensch.* 28, 1884). But already a note of warning has been raised from several quarters, and the experience of Poucet, of Lyons (*Lyon Médical*, Juin, 1884) is not very encouraging. In five cases (four female, one male) narcosis was only once normally effected; in two cases the rectal etherisation had to be abandoned in favour of inhalation; in one case the narcosis continued for two and a half hours after the operation; and in one case (woman aged thirty-seven years) alarming symptoms of impending death supervened, and reanimation was with difficulty accomplished. Poucet's experiments on rabbits and dogs emphasise the uncertainty and dangers (tympany, intestinal hæmorrhage, &c.) of this method. One cause of the uncertainty seems to lie in the variations in the conditions of absorption from the intestinal tube. In America, Dr. W. Bull (*New York Med. Rec.*, May, 1884) reports seventeen cases of rectal etherisation in adults, and in seven of these he noted the occurrence of diarrhœa, sometimes with bloody stools. In a hare-lip case of Dr. Weir's, a vigorous child was completely narcotised *per rectum* in three minutes by less than 60 grms. of ether, but in the course of the night it had profuse bloody motions and died in the morning (*Berliner klin. Wochensch.* 22, 1884). It is evident that the procedure should be more thoroughly investigated experimentally before it can with prudence be applied to the human body.

W. G. S.

FURTHER OBSERVATIONS ON THE ACTION OF HYDROCHLORATE OF COCAIN ON THE EYE.

Mr. Arthur Benson, of Dublin, laid a communication before the Ophthalmological Society of the United Kingdom on Dec. 11th, 1884, of which the following is an abstract:—The author found that the specimen of cocain with which his previous experiments had been conducted was contaminated, probably with eserin. Hence the subsequent contraction of the pupil, &c. This result did not occur when the pure drug was used, but the pupil remained dilated for several hours. The most minute trace of eserin counteracted the dilatation. He found in experimenting on himself that the anæsthesia produced reached its maximum in two or three minutes, and was extremely local; he could, by applying a small

quantity, produce anæsthesia of one half of his cornea and conjunctiva, whilst the other half retained perfect sensation. The degree of anæsthesia depended, within limits, upon the amount of the drug employed: repeated applications of a 2 per cent. solution produced almost total anæsthesia of the cornea and conjunctiva, so that the removal of foreign bodies and other operations could be performed painlessly. The sensibility of the iris seemed to be only slightly, if at all, diminished. He had applied it on the tongue and lips without marked results, a slight dulness of sensation alone being produced. In cases of photophobia he had used it with marked benefit (keratitis and conjunctivitis), and considered it of great value in facilitating the examination of such cases, as well as from a therapeutic point of view. In normal eyes it usually produced an increase of tension amounting to + 1 within from half to one hour, the tension falling before the dilatation ceased. He had not tested its effect upon the tension of diseased eyes. He had removed an aural polypus, having applied cocain to the ear, with apparently good results. He was certain that the drug when used pure and in abundance would prove one of the most valuable ever discovered. Its action being so local, and the duration of the anæsthesia so limited, it should be used abundantly, and a very short time before the operation.

PERNICIOUS ANÆMIA IN A CHILD OF FIVE YEARS.

Professor Adolf Kjellberg, of Stockholm, who enjoys a deservedly high reputation as a children's physician, communicates to the *Nordiskt medicinskt Arkiv* (Vol. XVI., Part 2, No. 13) a case of pernicious anæmia in a child of five years, which had come under his observation in 1883. Only one case had previously been recorded as occurring in childhood—that, namely, of a little girl of eleven years, which had been observed by Quincke.[a] Kjellberg's case was remarkable for its rapid course and for the presence of the characteristic symptoms in the most marked degree, such as discoloration of the skin, which assumed the yellowish hue of bees' wax, pallor of the lips, considerable prostration, asthmatic breathing on the slightest exertion, palpitations, intense anæmic murmur, hæmorrhage into both retinæ, paleness of the blood, with diminution in the number of the red corpuscles to 0·571 million in each cubic millimetre. The pathological appearances at the autopsy were equally characteristic: very extensive fatty degeneration of the muscular tissue of the heart; excessive paleness of the cerebral substance; hæmorrhages into the cerebellum, the pericardium, pleuræ, lungs, mucous membrane of the stomach and peritoneum; and, lastly, fatty degeneration of the epithelium of the uriniferous tubes. From the experience, therefore, derived from this case and from that detailed by Quincke, the author

[a] Volkmann's Sammlung klin. Vorträge, 1876. No. 100.

believes that it may be admitted that *pernicious anæmia presents the same features in childhood as in adult life.* Prof. Kjellberg's case throws little light on the ætiology of pernicious anæmia. It lends no support to the hypothesis that this disease results from a life of care and privation, from insufficient nutrition, from unhealthy residence, &c., for the child had lived under relatively favourable conditions of existence. The author, on the contrary, inclines to the opinion enunciated by Warfvinge, that pernicious anæmia should be regarded as an infectious disease, and he observes that the present case appears to tell in favour of the soundness of this opinion. Lastly, as regards treatment, he had given the little patient, from the time of his admission into hospital, arsenic in combination with a strengthening diet, but without any result, for the disease pursued its relentless and even course until it terminated in death.

J. W. M.

A CASE OF EXTRA-UTERINE PREGNANCY TREATED SUCCESSFULLY BY ELECTRICITY.

At a meeting of the Philadelphia Clinical Society, on October 24, 1884, Dr. E. E. Montgomery reported, for Dr. James Sibbald, the following remarkable case:—Mrs. R., aged thirty-four years, a woman weighing one hundred and seven pounds, of spare build and exceedingly nervo-bilious temperament; was married when twenty-one years of age, and had a miscarriage about five months subsequently, since which time (for thirteen years) she was never pregnant, although very desirous of becoming so. Her menstrual periods were always regular and natural up to June 16, 1884, at which time there was no sign of menstruation. One week later she commenced feeling sick in the morning, and also complained of soreness, with decided tenderness on pressure, over the right inguinal region, which gradually increased in severity. At the same time bloody discharges would appear, with no regularity, every week or two, lasting from a few hours to several days. On July 3, while standing in the street dealing with her butcher, she was suddenly seized with a violent pain in the abdomen, which caused her to fall in the street. She was picked up and carried to her bed. Morphia was administered hypodermically, and poultices were applied for six days before the tenderness subsided. For the next three weeks there was more or less tenderness over the right inguinal region. On August 4 (just one month after the first attack) she had a second attack of local peritonitis, which lasted five days. At this time she was sweeping the floor, when she suddenly fell, overcome by the severe abdominal pain. After the acute symptoms of the first attack had subsided, a vaginal examination revealed a soft mass on the right side of the uterus, very sensitive to pressure, and displacing that organ to the left. The sound was passed cautiously into the uterus a distance of over four inches, without obstruc-

tion. These facts, in connexion with the cessation of menses, morning sickness, some enlargement and soreness of breasts, with occasional bloody discharges from the uterus, warranted a diagnosis of extra-uterine pregnancy. On August 18, Dr. Montgomery saw the case in consultation, and coincided in the diagnosis. He advised the destruction of the fœtus, which was now in about the eleventh week of gestation, by means of electricity. Eight applications of the battery were made, which had the desired result. The mass is slightly perceptible on examination at the present time, the womb being still displaced to the left side. Menstruation has returned twice since, being perfectly normal, and no inconvenience is now experienced.—*Phil. Med. Times*, Nov. 29, 1884.

RHINOLITHS, OR NASAL CALCULI.

In the third part of the *Nordiskt medicinskt Arkiv* for 1884 (Vol. XVI., No. 16), a paper appears by Dr. E. Schmiegelow, of Copenhagen, on Calculous Formations in the Nasal Cavity (*Rhinoliths*). The author narrates the case of a man, aged fifty-eight, who for sixteen years suffered from a purulent and fœtid discharge from the left nostril, complicated with a complete obstruction of this portion of the nose. During five or six years, whenever he became warm, an abundant cold perspiration showed itself over the entire of the left side of his head. This symptom disappeared four years ago. The left nasal cavity was filled with a hard, dark body, which in the form of a fork was united to the inferior turbinated bone. Dr. Schmiegelow was convinced that he had to do with a rhinolith, for it could not be supposed that a sequestrum sprang from the bony structures of the face without having caused a deformity, which was not the case. The calculus was removed at two sittings after the manner of a lithotripsy. It was composed of uniform layers without any nucleus, and contained only a small quantity of organic matters, among which no trace of oxalic acid was found. Inorganic matters formed the greater part of the calculus, and they consisted chiefly of phosphate of calcium, phosphate of magnesium, carbonate of calcium in small proportion, and some traces of chlorides. Rhinoliths are of very rare occurrence, and in the bibliography of the subject only twenty instances are recorded. It is the difficulty of their diagnosis which, after their great rarity, attaches so much interest to these formations. A large number of these cases are treated for years as necroses of the bony structures of the nose, or as malignant tumours of the nasal cavity. Treatment consists in extraction, either complete or preceded by a lithotripsy. If the calculus is too large to be removed at a single attempt, or too hard to permit of lithotripsy, the operator is then obliged to detach the nose from the insertion of the calculus in order to procure more room.

J. W. M.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

A Convenient Ophthalmoscope for Students and Practitioners. By Arthur H. Benson, F.R.C.S.I.; Assistant Surgeon, St. Mark's Ophthalmic Hospital; Ophthalmic and Aural Surgeon to the City of Dublin Hospital.

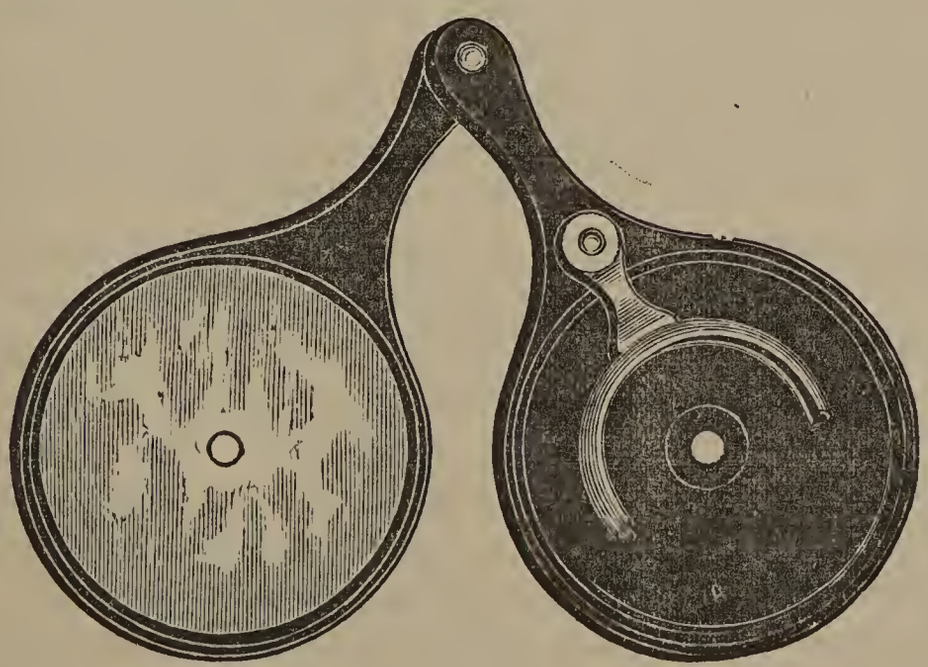
The instrument, of which the accompanying woodcut gives a fair idea, was designed to meet the requirements of the students attending St. Mark's Ophthalmic Hospital, Dublin. As I think it possesses some novelty of design, and is a more useful and efficient instrument than any of the cheaper ones at present in use elsewhere, I venture to draw attention to it. A student's ophthalmoscope, as also an ophthalmoscope for all general purposes, should possess, as far as possible, the following qualities:—

1. *Portability.* It should be light and compact, so as to allow it to be always carried without inconvenience.

2. *Simplicity.* It should be as free as possible from complicated mechanism, and should not consist of separable parts liable to be lost or mislaid.

3. *Cheapness*, so that none should be without one, and I need hardly add—

4. *Efficiency*, by which I mean that it should be sufficiently perfect to fulfil all the ordinary requirements of an ophthalmoscopic examination both of the fundus and of the refraction of the eye.



Since the method of testing refraction by retinoscopy has so completely taken the place of the erect image method, the elaborate and expensive series of lenses incorporated in the so-called "refraction"

ophthalmoscopes (Wecker's, Landolt's, Fox's, Nettleship's) have become almost useless; and although the specialist may still wish to possess one of these beautiful pieces of mechanism, he will find that the instrument I am about to describe will fulfil the necessities of 99 per cent. of his cases.

My ophthalmoscope consists of a plane and a concave mirror of the same size and curvature as those in Landolt's. The glass in both mirrors is perforated, the hole in the plane mirror being made somewhat larger than that in the concave one. The frame is made of black horn, cut into much the shape of the old-fashioned double eye-glasses, with a joint in the centre to permit of its folding up.

Behind the concave mirror is a clip for holding the lenses (as in Liebreich's) for direct examination in cases of ametropia.

When using the instrument one mirror is held in the hand, whilst the other is in front of the eye; thus the necessity for a handle is obviated, and the unpleasant and disturbing reflections experienced in using Nettleship's reversible mirror are avoided.

The ophthalmoscope, when folded, measures only $2\frac{1}{4}$ inches in length and $1\frac{1}{4}$ inches in breadth, and weighs (without the lenses) less than half an ounce.

It is fitted into a small soft leather case, which also contains pockets for the four small lenses and for one large convex lens, 2 inches in diameter. The latter, for use in the inverted method, will perhaps be more conveniently kept separate, as the case will then lie quite flat in the waistcoat or watch-pocket, taking up no more room than a pair of *pince-nez*.

My custom is to carry the large lens in a chamois bag. The lens has a hole in its periphery through which a loop of string is passed. This enables me to hang the lens, when not in use, on my wrist or on a button of my coat, instead of laying it down where it is liable to be scratched and mislaid. This is especially convenient in working in the out-patient department.

The advantages which I claim for this ophthalmoscope are its "portability," its "simplicity," its "cheapness" (about 5s. 6d., and 2s. 6d. extra for the large lens), and its "efficiency." I need not here restate the advantages of the plane mirror in retinoscopy, which have already been laid down by my friend and colleague, Mr. Story (*Ophth. Rev.*, August, 1883), and are now accepted. Nor need I say how incomparably better for all purposes is the large inverting lens than the small ones sold with Liebreich's instrument. The ophthalmoscope is so light that even if it falls it is unlikely to be injured, and when folded both the glass surfaces are protected, so that the soft leather case keeps it in safety.

It was made for me by Mr. George Prescott, of 9 Merrion-row, Dublin.

In Memoriam.

LESLIE MATURIN, M.K.Q.C.P., L.R.C.S.I.;

Resident Medical Officer at Cork-street Fever Hospital.

It affords us a melancholy satisfaction to transfer to the pages of this Journal, in which the greater number of Leslie Maturin's contributions to Medical Literature were published, the following memoir of his life and work, which appeared in the *Medical Times and Gazette* of November 29, 1884:—

"We deeply regret to record the almost sudden death of this talented and rising Irish physician, which occurred at his residence, Cork-street Fever Hospital, Dublin, on Wednesday, November 19th. Dr. Maturin died on the tenth day of an attack of scarlet fever, caught under circumstances which strongly remind us of the sad death of Dr. Samuel Rabbeth some weeks ago. Six days before the symptoms of his fatal illness showed themselves, Dr. Maturin went with a brother practitioner to visit a little child lying dangerously ill of scarlatina anginosa. A large abscess near the tonsil endangered the child's life, and Dr. Maturin opened it. At the same moment the child coughed into his face. So conscious was he of the danger of this accident that he returned to Cork-street Hospital, saying that he felt he was in for an attack. This presentiment proved only too well founded. He visited the sick child on Tuesday afternoon, November 4th, and the following Monday, November 10th, he was suddenly seized with shivering, vomiting, purging, violent headache, and pyrexia so intense that in a few hours his temperature rose to 105·4°. Severe nervous (ataxic) symptoms quickly set in, the throat became intensely painful and sloughy, and extreme dysphagia accelerated a deadly loss of strength. Then came heart failure, and the end.

"Leslie Maturin, whose life was thus untimely cut short at the age of thirty-five years, was the eldest son of Mr. John Maturin, of Newtownstewart, Co. Tyrone, a scion of one of the many old French Huguenot families which sought a refuge in Ireland after the Revocation of the Edict of Nantes. From his student days his career was one of great promise. Even before he obtained his diplomas, in 1874–75, he was selected to fill the responsible post of Assistant-Accoucheur in the Maternity attached to

Dr. Steevens' Hospital, Dublin, where he had previously held the appointment of Surgical Resident Pupil for a lengthened period. Subsequently he acted for some time as Surgeon-Superintendent of the Emigration Department, New Zealand Government. But these tame employments did not harmonise with Maturin's temperament, which was zealous, daring, and ambitious, and, accordingly, on the outbreak of the Russo-Turkish War in the summer of 1877, we find him volunteering as Surgeon to the Red Cross Society—the Russian Sick and Wounded Society under the administratorship of Dr. Humphry Sandwith, C.B. Through the trying campaign of the memorable winter of 1877–78, and through the still more trying horrors of the famous sieges of Plevna and Rahova, and the battle of Gorney Dubnick, Leslie Maturin passed unscathed. He was second in command to Dr. Sandwith, who wrote in the highest terms of praise of his work and abilities.

"On the conclusion of the war, Dr. Maturin returned home and served for some time as a dispensary medical officer, both in that *ultima Thule*, Achill Island, and also at Blessington, Co. Wicklow. In 1881 he was appointed medical officer in sole charge of the Smallpox and Fever Hospital of the South Dublin Union, at Kilmainham. This appointment he continued to hold until the hospital was closed in 1883. While in charge he did excellent work, the results of which he published in the form of two Annual Reports in the *Dublin Journal of Medical Science*. Early in 1883 he became Resident Medical Officer and Registrar to Cork-street Fever Hospital, Dublin, where his kindness and attention to the sick, his ready resource and skill, often excited the admiration of the writer of this notice.

"During his comparatively brief career, Leslie Maturin contributed many valuable papers to current medical literature. In the *Dublin Journal of Medical Science* he published several articles of interest and of scientific value. Among them we would, in particular, mention his reports of Kilmainham Fever Hospital, in which are included statistics relating to nearly three years' constant work in that institution, and a very important article on the 'Use of Urari in Tetanus,' as also one on 'Vascular Hydrosis as a Prophylactic to Poisonous Absorption.'

"Dr. Maturin's death has excited wide-spread sympathy in Dublin, and the esteem and affection in which he was held received ample proof, in the numerous and representative attendance of members of the profession and personal friends, on the occasion of his interment at Mount Jerome Cemetery on the morning of the 21st instant."

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

FEBRUARY 2, 1885.

PART I.

ORIGINAL COMMUNICATIONS.

ART. V.—*On Lupus and its Treatment.* By WALTER G. SMITH, M.D.; Physician to Sir Patrick Dun's Hospital; King's Professor of Materia Medica, School of Physic, T.C.D.

A CURSORY perusal of even a portion of the somewhat extensive literature which has grown up around lupus,[a] or a short experience of this affection, can scarcely lead to any other conclusion than that there are considerable difficulties besetting its study, especially in relation to the precise definition and limitations, the clinical relations, and the ætiology of lupus. Our ideas are, however, gradually assuming a more concrete form, and recent inquiries are calculated to place the matter upon a surer basis.

In the following communication I propose to make some remarks upon the nature and treatment of lupus, founded, in part, upon my own experience of the disease.

Let me first call attention to the summary statement of the cases of which I possess memoranda. A few recent cases are not embodied in the table.

Year	Males	Females	Total
Hospital Cases—			
1869-72 - - -	3	8	11
1873-76 - - -	2	8	10
1877 - - - -	—	—	—
1878-81 - - -	13	22	35
Private Cases - - -	4	6	10
Total - -	22	44	66

[a] The term lupus was first appropriated to the disease we now recognise as such by Sauvages, who called it "cancer lupus." The term "noli me tangere" is of more ancient date, and its origin is uncertain.

It is plain that in drawing up statistics of an affection, such as lupus, of debatable limits, the figures will be affected by the special views of the compiler—*i.e.*, whether he is inclined to assume a broad or narrow basis for diagnosis. Hence there is some uncertainty in comparing the numerical data given by observers in different countries. Taking, however, the above numbers, derived from an analysis of about 8,000 cases of cutaneous disease, I find that the frequency of occurrence of lupus in Ireland (Dublin) may be reckoned as approximately 1 in 200. In England and Scotland it seems to be much commoner. Dr. J. H. Stowers gives 2·5 per cent. as the result of his observations in London, and Dr. M'Call Anderson's statistics ascribe it a frequency of about 1 in 50.[a]

Professor Kaposi, of Vienna, has seen 1,200 cases of lupus in 20 years, while in the United States it is decidedly rare, and, according to the statistics of the American Dermatological Association, occurs in the ratio of only 1 in 400. Dr. Duhring remarks that the majority of cases appeared among the poorer Irish and German immigrants.

In my cases the ratio of females to males is 2:1, the preponderance in the female sex being in accord with the observation of most other writers.

In regard to the *differential diagnosis*, there are practically four other affections of the skin from which we have to discriminate lupus:—

1. *Scrofuloderma.*—This is confessedly sometimes a difficult question, and loses much of its significance if we reckon lupus as a tuberculosis. True primary lupus is rare in middle or advanced life; scrofulous disease of the skin is not so rare. Scrofuloderma sometimes responds very satisfactorily and rapidly to treatment, and ulcerations of years' standing may close up in a few weeks by the use of suitable measures.

2. *Syphilitic lesions.*—While in the great majority of cases this is not difficult with sufficient care and experience, yet every now and then an example of ulcerating nodules about the nose, face, or scalp, raises the question, which is one of considerable practical moment. I have known a patch of tertiary syphilitic nodules "scraped" *secundum artem* in mistake for lupus. A course of iodide of potassium soon cleared away the nodules. Syphilis will destroy more in a few weeks than lupus in as many months or years,

[a] Treatment of Diseases of the Skin, with an Analysis of 11,000 Consecutive Cases. 1872.

and the much greater rapidity of the destructive process in syphilitic lesions, coupled with the thicker crusting, are valuable elements in the diagnosis, which is clinched by the remarkable and gratifying cures for which we are indebted to the alkaline iodides.

And here I will enter a protest against a common and, in my opinion, mischievous error of nomenclature—viz., the term "syphilitic lupus."

There are few, I suppose, now who consider with Ricord that lupus is really allied to syphilis (a "scrofulate of syphilis"), or is an offshoot of hereditary syphilis (E. Wilson, Veiel); and whether we accept, or not, the doctrine of the specific tuberculous nature of lupus, we cannot at one time have a syphilitic lupus and at another time a non-syphilitic lupus.

It has been observed that when patients affected with lupus became syphilised, treatment by potassium iodide, while it removed the syphilitic lesions, left the lupus absolutely untouched.[a]

An occasional difficulty in diagnosis furnishes no reason for mixing up totally different affections. Lupus happening in a syphilitic patient is not syphilitic lupus, just as lichen scrofulosorum is not an identical term with scrofulous lichen.

Hence, I think, the use of such loose terminology as syphilitic lupus, syphilitic psoriasis, &c., should be discountenanced. Let us rather speak of scaly, of tubercular syphilides, and so on. At the same time, I do not mean to deny the modifying influence of diathesis upon local lesions, nor should its consideration be neglected.

The term "lupoid," so often heard, is likewise an objectionable one, sometimes surely nought but a thin cloak for ignorance, and dates from a time when less care perhaps was taken, or opportunity existed, for framing an exact diagnosis. If we do not know, or cannot formulate a diagnosis in a given case, let it pass; but why say "lupoid" when we do not say "syphiloid?" It is time for *lupoid* to slide out of use, as has happened, *e.g.*, with the word *cancroid.*

3. *Psoriasis.*—Mr. Jonathan Hutchinson's proposal to designate certain obstinate scaly red patches by the hybrid term psoriasis-lupus is, I think, a step rather in the direction of confusion than of simplification of our ideas. Still it is curious to note that occasionally we do meet with cases wherein a doubt may arise as to the diagnosis between lupus and psoriasis, and in which an attentive consideration

[a] Edinburgh Med. Journ., Jan., 1884.

of the history and character of the affection is requisite in order to form a correct opinion.[a]

4. It may seem strange to allude to the possibility of mistaking lupus for chronic eczema, or *vice versâ*. But, independently of the fact that lupous surfaces are liable to attacks of intercurrent superficial inflammation which may mask the lupus, I have seen a few cases of superficial lupus confined solely to the helices of the ears, where the superficial appearances almost exactly simulated those of eczema. The diagnosis rests upon the extreme chronicity of the process, and especially upon the existence of scarring, and other evidences of friability and loss of tissue. Primary lupus of the inside of the nostrils may, too, easily escape detection, and it is probable that some cases of supposed intractable "eczema" of the nasal mucous membrane are really lupus. Lupous perforation of the cartilaginous septum may occur without any external manifestation of the disease, but I have never known the vomer to be attacked. This leads me to refer to lupus on mucous membranes elsewhere. In cases of long-established facial lupus it is not uncommon to meet with lupus on the gums, showing itself as a well-defined granular red fringe. In all the cases I have observed the disease commenced in, and was usually limited to, the region of the incisor teeth of the upper jaw.

Nor is lupus very rare upon the palate, but I have seen only one case of lupus invading the larynx. Lupus of the conjunctiva is common enough from extension of facial lupus, but primary lupus of the conjunctiva is rare, and I have seen but a few cases where this diagnosis was made.

Of lupus involving the vulva I have met with only one case.[b]

Among the rarer remote consequence of old-standing lupous disease is deformity of the parts (*lupus mutilans*), which, when it occurs on the hands, as I have seen, bears no small resemblance to leprous deformity.[c]

In one case I have met with the unfortunate event of the supervention of malignant disease upon lupus. A man, aged thirty-five years, who consulted me for extensive lupus of the face and nose, presented himself subsequently with a large, dark, fungating malignant growth springing from the nose. This growth was removed

[a] *Cf.* Plates XIX., XXXVII. New Syd. Soc. Atlas.

[b] *Cf.* Dr. Matthews Duncan. Edinb. Med. Journ. July, 1884. Med. Times and Gaz. November 15, 1884. Dr. A. Macdonald. Edinb. Med. Journ. April, 1884.

[c] *Cf.* Drawing in Virchow's Archiv. 1883. P. 218.

by my colleague, Dr. C. Ball, but the patient succumbed to a recurrence of the malignant growths in the course of the year.[a]

Turning now to the pathology of lupus, we find two chief views prevailing as to its ætiology—

1. What may be termed the Anglo-French school—*i.e.*, that lupus has a constitutional foundation, and is allied especially to scrofula.

Mr. Jonathan Hutchinson[b] seeks, with Auspitz, to widen the signification of lupus, and contends for a clinical "lupus family" of affections. He regards lupus on the whole "as a sort of cross produced by tendencies at once to scrofula and cancer, while it receives many modifications, from peculiarities in the patient's skin and his morbid tendencies, in one or the other direction." It is interesting to note that a similar view was put forward as novel at the time by Dr. James Houghton, fifty years ago:—"Were we called on to declare our opinion of the essential character of lupus, we should say that it is an intermediate pathological state between cancer and scrofula, partaking somewhat of the nature of both, but constituting a state in which, by the blending of these two diseases, many of their peculiar characteristics are lost."[c]

2. The Vienna school, as represented by Kaposi—that lupus is an exclusively local affection, and hence constitutional treatment is rejected as useless. But, notwithstanding Kaposi and the arguments he adduces, converging evidence has been accumulating in favour of the doctrine that lupus is a branch of the tuberculous stock; or, in other words, that lupus will find its true place among the chronic infective diseases of the skin—*i.e.*, those dependent upon the action of an organised virus capable of reproducing itself in the body (*e.g.*, lepra, syphilis, and tuberculosis).

The following remarks refer particularly to lupus vulgaris, for the nature of lupus erythematosus is still a matter of controversy, and Veiel[d] places it among the superficial inflammations of the skin along with eczema and impetigo.

The question, then, is this—Syphilis has a specific virus, likewise leprosy, and tuberculosis; is it so with lupus?

Ziegler,[e] while he places lupus among the infective granulomata,

[a] "Auf Lupus eine sehr deletäre Form von Carcinom entstehen kann" (Kaposi).

[b] Pedigree of Disease. 1884.

[c] Cyclop. Pract. Med. III. 1834. Art., Noli Me Tangere. P. 177.

[d] Ziemssen's Handbuch der Hautkrankheiten. 1883.

[e] Patholog. Anatomy. Macalister. Part. I. 1883.

admits that "the exciting cause of lupus is unknown." Similarly Hyde[a]—"The causes of lupus vulgaris are absolutely unknown;" and Neisser,[b] in his admirable article, to which I am largely indebted, and in which he upholds on general pathological grounds the tuberculous nature of lupus, says:—"But I cannot yet adduce the exact proof of this connexion, since neither I nor others have hitherto succeeded in demonstrating with certainty the bacilli of tuberculosis in lupous material." He presently adds that he holds the forthcoming proof to be only a question of time.

The question may be conveniently studied from three points of view—viz., clinical, histological, and experimental.

1. *Clinical Aspects.*—Upon this point suffice it to say that while Kaposi and his followers are unable to see any connexion with scrofula or tubercle, and even ridicule the proposition, they have arrayed against them the testimony of numerous skilled observers in England, France, and Germany, who recognise the points of resemblance, and note the frequent coincidence of cheesy affections of the glands, bones, and joints with lupus.[c] I cannot give statistics from my own cases, but certainly the association of lupus with scrofulous glands is sufficiently common here, and, with Fagge and others, I have witnessed the development of lupus secondary to suppurative strumous inflammation.

Now, since the fundamental unity of scrofulosis and tuberculosis has been established both on clinical and experimental grounds, if it can be shown that an intimate relation exists between lupus and scrofula an argument will be furnished for bringing lupus into the tuberculous family. M. Besnier, one of the foremost French dermatologists, insists upon the connexion between lupus and tuberculosis. In June and July, 1883, among 38 patients under his care for lupus in St. Louis, 8 presented well-marked physical signs of phthisis.[d] Dr. Tilbury Fox[e] states that lupus, in many cases, occurs in phthisical subjects; and Mr. Hutchinson has pointed out that phthisis is not unfrequently observed in the families of those suffering from lupus.

It is quite true that lupus is rarely observed in several members of the same family (Fagge), that it is seldom found

[a] Diseases of the Skin. 1883.

[b] Ziemssen. Handbuch der Hautkrankheiten.

[c] *Cf.* Discussion on Lupus, Section of Dermatology and Syphilis. Internat. Med. Congress, Copenhagen. 1884.

[d] London Med. Rec. March, 1884.

[e] Skin Diseases. Third Edition. 1873.

in combination with general tuberculosis, and that we have no evidence of hereditary or of direct transmission in the human subject.

2. *Histological*—Careful investigations have shown that no essential difference can be established between a caseating miliary tubercle and a lupous nodule, which sometimes exhibits "the exact appearance of tubercles" (Ziegler). The pathological processes in each are the same in kind, but differ in degree. Thus, in lupus it is less acute and less intense, and hence we get slower development of the inflammatory granuloma with a richer development of vessels, and consequently a more gradual destruction towards the centre, with peripheral healing and formation of spindle-cell tissue—*i.e.*, cicatrix (Neisser). But the decisive proof—the demonstration of tubercle-bacilli in lupus-material—remained to be given, and it was not long before Neisser's prophecy was fulfilled. Dr. Robert Koch, following up Friedländer's anatomical investigations, examined 7 cases of lupus of unimpeachable diagnosis.

In 4 cases he excised parts of the skin. In 3 cases he examined scrapings only of the lupus-tissue.

For direct microscopic investigation he used only the excised bits of skin. The tubercle-bacilli were found sparsely in each of the 4 cases, and only in the interior of the giant-cells. The tubercle-bacilli in lupous tissue are so isolated that in 2 cases the bacilli were not found until in the one case 27 sections and in the other 43 sections had been made. Yet it repeatedly happened that when in a number of sections not a single bacillus appeared, sections taken close by exhibited 1 to 3 bacilli. Koch never found more than one bacillus in a giant-cell.[a]

According to Unna, the bacilli are observable in quantity by partially digesting hardened specimens and examining the precipitate that falls down. Demme, Pfeiffer, and Doutrelepont had published records of the occurrence of tubercle-bacilli in lupous skin, and in the tubercles of animals inoculated with lupus. But Koch states that his experiments were finished for some months before their communications were published.[b]

The curiously sparse occurrence of the bacilli in lupus suggests a ready explanation of some of the negative results of other histologists, and likewise forbids the hope of deriving material help in diagnosis from the use of the microscope. So far as I am

[a] *Cf.* Figs. 29, 30, Mittheilungen aus dem kaiserlichen Gesundheitsamte, 1884.

[b] *Cf.* Morison on Lupus and Tuberculosis. Amer. Journ. Med. Sci. April, 1884.

aware, bacilli have not been demonstrated in connexion with lupus erythematosus.

3. *Experimental.*—Koch[a] made inoculations from all his seven cases into the anterior chamber of the eye of rabbits. In every case this was followed by tuberculosis of the iris, and in those animals which lived long enough by general tuberculosis. Numerous tubercle-bacilli were found in these inoculation-tubercles. From one specimen (excised from the cheek of a boy ten years old) he obtained pure cultures, which were several times utilised for successful inoculations on animals.

Again, Pagenstecher made three inoculations from conjunctival lupus into the anterior chamber of the eyes of rabbits. In two cases he succeeded, in one he failed. Microscopical examination of the two successful cases by Pfeiffer (Ehrlich's method) exhibited Koch's bacilli, duly recognised as such by Ziegler, Ehrlich, and others.[b] Positive results such as these, coupled with those of Schüller and Hüter, more than counterbalance the negative results announced by Cohnheim, Hänsell, and others.

Two years ago Vidal and Leloir could assert that "no results have been obtained from the experimental inoculation of animals with lupus."[c] Gathering together, then, the foregoing evidence, we seem to be guided to the conclusion that lupus is a tuberculosis (scrofulosis) of the skin excited by the tubercle-bacillus. The localisation of the bacillus in the skin, and the relatively rare involvement of other organs, constitute the peculiar features of lupus as compared with other forms of tuberculosis. The bacilli of lupus and tubercle are probably the same qualitatively, but there is a quantitative difference which is accentuated by the more unfavourable conditions of nutrition in the colder skin. Complications with tuberculous affections of other organs—*e.g.*, glands, joints, bones, and even with analogous skin affections—*e.g.*, ulcerating scrofulides, are frequent. Their non-occurrence does not contradict the tuberculous ætiology of lupus.

Genetically, then, there is only one tuberculosis of the skin, and we may say that while lupus is always tuberculosis of the skin, yet tuberculosis of the skin assumes other forms than that of lupus (Neisser). The subjoined table may be useful for reference :—

[a] Loc. cit.

[b] Berl. klin. Wochenschrift. 7 Mai, 1883.

[c] Journ. of Cutan. and Vener. Dis. 1882. P. 349.

Tuberculosis of the Skin.

1. *Miliary Tuberculosis.*	2. *Lupus* (*Tuberculo-derma*).	3. *Ulcerating Scrofulo-derma.*
Miliary tubercles and ulcers as part of a general tuberculosis. Caseates. Very rare.	A harmless (*quoad* system) form of tuberculosis, mostly limited to the skin. Does not caseate.	*i.e.*, ulcerations arising from bursting of a "cold" subcutaneous abscess. Often yields well to treatment.



Symmetrical.	*Unsymmetrical.*
Lupus erythematosus. L. sebaceus, &c. Very difficult to cure.	Lupus vulgaris. L. exulcerans, &c. Local malignancy.

Aberrant forms.

In short, the evidence is strong of the unity of cause in tuberculosis, lupus, and scrofulosis, although we do not yet know the special determining conditions of each case. Ewald[a] even goes so far as to suggest *Morbus Kochii* as a clinical term for this group of three, by way of analogy to Morbus Brightii, but this innovation is scarcely likely to be approved.

If asked for a definition of lupus, I would say it is "a very chronic new cell-growth, depending upon infection with the bacillus tuberculosis, always ending by scars, with or without ulceration, and usually developing brownish-red nodules."

Treatment of Lupus.—The two prime objects of treatment are (1) to check the development and extension of the morbific virus; (2) to destroy the existing foci of disease. Constitutional treatment can bear upon the first object only; local treatment has a relation to both objects. In regard to constitutional treatment, I will only say that if the tuberculous doctrine of lupus be accepted it lends emphasis to the recommendations of those who advocate the internal use of anti-scrofulous remedies, and especially cod-liver oil, iodine, iodoform, and the adoption of all measures calculated to fortify the system, while, on the other hand, it adds force to those who teach that enfeebling remedies, such as mercury, should be abstained from.

I may also point out that some of those who refuse to acknowledge a relationship between lupus and scrofula, nevertheless appreciate the use of such therapeutic means as those just referred to, and which may be supposed to act by modifying the soil, for

[a] Berl. klin. Wochenschrift. No. 44. 1884.

"we become tuberculous, we are born scrofulous" (Landouzy). Dr. J. Warburton Begbie[a] mentions that, many years ago, when a student in Paris, he saw numerous cases of ulcerating lupus in the wards of St. Louis Hospital, which were materially benefited, and some apparently cured, by the administration of cod-liver oil in very large doses. The patients took the oil, not in spoonful doses, but in *large glasses* or *tumblerfuls.*

The late Dr. Edmund Parkes, who completed and edited Dr. A. Todd Thomson's "Treatise on Diseases of the Skin, 1850," testifies that Dr. Thomson was extremely successful in temporarily, and sometimes even permanently, arresting the ravages of lupus. Dr. Parkes saw many cases treated by him in which "a speedy, manifest, and undoubted improvement followed the use of certain remedies," chiefly iodine, iron, and arsenic conjointly, while local applications were sparingly used. Cod-liver oil was frequently given.

On the whole, in reference to the internal medication of lupus, we cannot maintain that as yet we know of any specific against the lupus (*i.e.*, tuberculous) virus; and perhaps the most that can be done in this way is by strengthening the constitution to increase the capacity for resistance of the body against the spread of the germs of the disease.

It will be generally admitted that local treatment is the more important, and the principles to bear in mind are these:—

(*a*) To remove useless and morbid tissue.

(*b*) To effect in those parts which are still firm and comparatively healthy the absorption of the lupous infiltration.

(*c*) To vigorously suppress any relapse at once (Volkmann).

Locally, in spite of the easy accessibility of the lupus foci, our therapeutical efforts are not always rewarded by success. As to erythematous lupus, let us hear what MM. Besnier and Doyon say:—"Nothing is more deceptive than the therapeutics of lupus erythematosus, even allowing for recent incontestable advances. Spontaneous cures, speedy success with the most simple and the most diverse methods, frequent relapses, often unsuccess even when recourse is had to the most active measures—this is what the practitioner has to expect in the treatment of lupus erythematosus."

Before entering upon the discussion of the choice of special remedies, the following propositions may be laid down:—

[a] Works, New Syd. Soc. 1882. P. 319.

(*a*) There is no single lupus panacea to be looked for.

(*b*) No individual method will suit every case.

(*c*) Relapses will occur in a considerable number of cases, spite of any and every treatment.

(*d*) When there is much irritation, soothing treatment should be first adopted. Severe local procedures sometimes do more harm than good.

For the local extirpation of the new growth the chief methods have been :—

1. Chemical agents :

(*a*) *Elements—e.g.*, iodine.

(*β*) *Acids—e.g.*, arsenious, salicylic (carbolic and pyrogallic).

(*γ*) *Bases—e.g.*, the caustic alkalies, including Vienna paste and London paste.

(*δ*) *Salts*, of silver, mercury, and zinc (Landolfi's paste).

From a practical point of view, chemical caustics may be divided into those that destroy indiscriminately both sound and diseased tissues—*e.g.*, caustic potash, Vienna paste, Landolfi's paste; and those that, when carefully used, destroy only the diseased tissue—*e.g.*, arsenious acid and pyrogallic acid.

Neisser[a] strongly recommends pyrogallic acid, as introduced by Jarisch, and, from my own limited experience of it, I am inclined to endorse their recommendation.

Boring with a pointed stick of lunar caustic combines the effects of mechanical destruction with a corrosive action, but is very painful.

2. Thermal—*e.g.*, the actual cautery, or the galvanic cautery, or Paquelin's instrument.

3. Mechanical measures—*e.g.*, excision.

Within the last few years much attention has been directed to certain modifications of operative treatment. Of these may be named :—

(*a*) Multiple puncture, introduced by Veiel (1871) and Dubini, and advocated by Volkmann.

This method is wanting in precision, and is applicable to only a few cases of limited extent, and in an early stage.

(*b*) Linear scarification, an extension of the idea of multiple puncture. It was introduced by Mr. Balmanno Squire in 1880,[b] and is largely used in France by Vidal and Besnier.

The object of each of these methods is to starve the neoplasm by cutting off or interfering with its blood-supply.

[a] Loc. cit. [b] Brit. Med. Journ. May 1st, 1880.

(*c*) The curette, or sharp spoon (Volkmann, 1870), or method of erasion.[a]

This method of treatment is best followed up by immediate cauterisation of the raw surface, in the hope of destroying the outlying germs of the disease.

I have had some experience of these methods, each of which, perhaps, has its own proper sphere, but, speaking broadly, I prefer the method by scraping, or erasion. And a comparison of the practice and results of the treatment of lupus at the present time with the results expected or attained twenty or even ten years ago will show, beyond question, that if lupus cannot as yet be expunged from the list of *opprobria medicinæ*, still the disease has been deprived of some of its repulsiveness, its ravages have been more effectually checked, and its prognosis has been materially brightened.

I shall not now enter into details of the actual procedure in either case, but will content myself, in conclusion, with summarily specifying the individual features of these two methods.

Erasion, or scraping—

1. Differentiates sound from diseased tissue, for healthy skin will not give way to the spoon.
2. It is rapid of execution.
3. It is, as a rule, not followed by much after-pain.
4. The scraped surface heals wonderfully quickly.
5. It leaves a level and tolerably sightly cicatrix.

Scarification—

1. Is applicable to some situations, and, in some cases, where erasion is unsuitable or inadvisable.
2. It is less painful, and, to some persons, a less repellent operation.
3. There is a minimal loss of substance.
4. It is especially adapted for diffuse non-ulcerating infiltrations.
5. The scar left is scarcely distinguishable from the healthy skin, and it is said not to be liable to cheloid growths, which sometimes develop upon the scars left by scraping operations.

Hence, in lupus of the face, where æsthetic considerations have especial force, linear scarification deserves a full trial in the promise it affords of effecting the desired object with the least amount of consequent deformity.

[a] *Cf.* Malcolm Morris on the Comparative Advantages of Scraping and Scarification in the Treatment of Lupus Vulgaris. Brit. Med. Journ., Aug. 18, 1883.

Art. VI.—*Fourteen Cases of Ovariotomy.*[a]

By Arthur V. Macan, M.B.; Master of the Rotunda Hospital.

In the paper I have the honour of reading before the Obstetric Section of the Academy to-night, I purpose, first of all, to give, briefly, the details of fourteen cases where I myself have performed ovariotomy, and then to draw attention to some points in practice which they seem specially to illustrate, and to which, in my opinion, the attention of the general profession in this country has not as yet been sufficiently directed.

The first two cases of the series were operated on in the City of Dublin Hospital—the other twelve in the Rotunda Hospital. I have to thank Drs. Fitzgibbon and Wheeler for their kindness in assisting me in the two former, and Drs. Bennett, Corley, Atthill, and Smyly for their help and assistance at the cases operated on in the Rotunda Hospital.

I will now give a brief *résumé* of these fourteen cases:—

Case I.—M. A. O'K., aged twenty-five, single, operated on in the City of Dublin Hospital on October 15, 1880, being sent to me by Sir William Miller, of Derry.

Operation.—A multilocular cyst, with considerable parietal adhesions. No fluid flowed through the trocar; so the cyst wall was incised and the hand inserted, and, after considerable difficulty, the cyst broken down and the tumour removed. Pedicle long and slender; was transfixed and tied in two portions.

This girl made a most perfect recovery.

Case II.—Mrs. S. L., aged forty; no children. Small cyst, about size of uterus at five and a half months' gestation, filling the right side of pelvis, and pressing the uterus over to the left. No sulcus could be felt between the fundus and the tumour, nor could the latter be raised in the slightest degree from the brim of the pelvis. The diagnosis was, therefore, made of a very short pedicle, and probably an intra-ligamentous growth. At the operation (which was performed on June 2nd, 1882) both these suppositions proved to be correct; and there being no pedicle, I passed a double ligature as low down on the base of the tumour as possible, and tied the pedicle thus formed in two parts, and cut the tumour off at some distance above it. The pedicle, in fact, was composed of the walls of the cyst itself, and on this account I inserted a glass drainage-tube before closing the abdominal walls.

[a] Read in the Obstetrical Section of the Academy of Medicine in Ireland, Friday, January 9, 1885.

The highest temperature this woman had for three weeks after the operation was 100·6°. The drainage-tube I allowed to remain in too long, and a good deal of suppuration took place, pus—and by no means sweet-smelling pus—flowing freely from the wound in the abdomen. But, notwithstanding this, the temperature remained practically normal.

On the third day I washed out the peritoneum with carbolic acid solution, after which she had well-marked carbolic urine.

This woman was admitted afterwards into the Rotunda Hospital, the fistulous tract being still unclosed, and died six months after the operation of chronic peritonitis, complicated with cancer of the liver.

Case III.—Mrs. E. S., aged twenty-three; sent to me from Preston by Dr. Robinson, an old pupil of the City of Dublin Hospital.

The tumour, a large unilocular cyst, had been noticed by the doctor who had attended her in her last confinement, two years previously, and was at first taken for a second child. The operation (which was performed on December 18th, 1882) was entirely uncomplicated, the cyst containing twenty-two pints of a dark fluid. Her temperature, nevertheless, rose much more than the average height during convalescence.

Case IV.—E. F., aged fifty-one, single. This woman was a patient in the Rotunda Hospital when I took charge of it. Dr. Atthill had not operated on her, either from there being some uncertainty in the diagnosis, or from not looking on her case as a favourable one. She was greatly reduced before the operation, and though there was no hæmorrhage, I feared she would die on the table. The tumour was an intra-ligamentous cyst, which had developed between the folds of the left broad ligament, and had no pedicle. I passed the ligature as low down as possible, and removed the tumour above the ligature. This woman was operated on on February 2nd, 1883. She never recovered from the shock of the operation, and died at 10 30 p.m. on February 4th, her temperature never having risen as high as 100°.

Case V.—M. B., aged twenty, single; sent up by Dr. Curtis, of Cork. The tumour in this case had grown very rapidly since it was first noticed, which was six months before she was admitted into the Rotunda Hospital. She was operated on on March 24th, 1881, Dr. Curtis being present. I should have mentioned that there was a considerable amount of albumen in the urine, and the abdominal walls were greatly thickened by œdema. There was great difficulty experienced in withdrawing the tumour from the abdomen, as part of it was very solid; when an attempt was made to break it down by passing the hand into the interior of the cyst this was found impossible, large spicula of bone projecting in every direction. There were extensive omental adhesions, some containing arteries nearly the size of the radial. After

the removal of the tumour the other ovary was found also to be degenerated, being about the size of a hen's egg. It was quite sessile, and contained a lot of cheesy matter mixed with hair. It was ligatured with difficulty, and then removed. The tumours, when further examined, proved both to be dermoid cysts. The patient seemed at first to be doing very well, but at 7 30 p.m. on the day following the operation, her pulse was 160, and hardly to be counted, her temperature being 102·5°. As she seemed to be dying of septicæmia, I determined to re-open the abdomen and insert a drainage-tube. Dr. Bennett kindly came over and assisted me in doing this. Very little fluid was drawn out of the abdomen, but at 12 p.m., less than four hours after the operation, the pulse had fallen to 132, and the temperature to 101·3°; the next morning the pulse was 122, and temperature 100·6°. This girl had afterwards some ups and downs from the formation of an abscess in the abdominal walls, which caused a considerable rise of temperature as late as the sixteenth day, but finally made a perfect recovery.

Case VI.—Mrs. B. C., aged twenty-nine; admitted into the Rotunda Hospital on May 11th, 1883. This woman had first noticed a swelling about two months after the birth of her fifth child, a year before her admission into hospital. She had suffered from frequent attacks of pain in the abdomen, accompanied with vomiting and rise of temperature. She was operated on on May 25; the cyst was a multilocular one; there were most extensive intestinal adhesions, which were so troublesome that the operation lasted for two and a half hours. On account of the extensive adhesions a glass drainage-tube was introduced. The intestines were in this case exposed for a long time to the carbolic spray, and the woman had smoky urine and a good deal of vomiting for some days, but her temperature never rose above 101·4°, her pulse at the time being only 88.

Case VII.—M. D., aged nineteen, single. Admitted to the Rotunda Hospital on June 12th, 1883. Operated on on June 29th. Unilocular parovarian cyst; no complications. This girl made a splendid recovery, her pulse never rising above 104. About three weeks after the operation an abscess formed in the abdominal walls. She returned to the hospital four months afterwards, complaining of pain in the abdominal wall. On examination a small fistula was observed about the middle of the wound, and in it was found a silk ligature, lying quite loose. This was removed without difficulty, and the fistula soon closed.

Case VIII.—M. J. J., aged twenty-eight, single; sent over from Holyhead by Dr. Maguire. Admitted into the Rotunda Hospital on January 2nd, 1884. Operated on on January 10th. Tumour, a large multilocular cyst with parietal adhesions; part of the tumour projected down into Douglas'

space, but was fortunately not adherent there. The fluid was very viscid, and a considerable quantity escaped beside the trochar into the abdominal cavity. The maximal temperature was on the third day, when it reached 100·6°, and patient never had the slightest bad symptom.

Case IX.—M. M., aged twenty-four, single; admitted on January 11th, 1884, from Galmoy, county Kilkenny; sent by Dr. Duckworth, Donaghmore. Operated on on January 25th, 1884. Tumour, a unilocular cyst. Pedicle was long, but in tying it the silk broke, and a good deal of blood escaped from the puncture in the broad ligament. A second ligature was passed, as nearly as possible at the same place, and tied firmly, when all bleeding apparently ceased. This patient went on well for twenty-four hours, after which time the pulse and temperature rose rapidly, so that at 4 p.m. next day the former was 156, and the latter 101·6.° I therefore opened the abdominal incision thirty-four hours after the operation, and introduced a drainage-tube, through which I removed more than an ounce of seemingly quite pure blood. As the operation had been quite uncomplicated, it was obvious that the hæmorrhage must have come from the puncture in the pedicle, which bled after the abdominal wound was closed. The next morning, at 8 a.m., her pulse was 120, and temperature 99·4°, and from this the patient went on very well till the eleventh day, when she had a sudden rise of temperature to 102·7°, and pulse 120, with great pain along the lower border of the right ribs and great dyspnœa, followed by bloody sputa. This, I thought, was most probably due to infarction—a clot in the pedicle having got loose and been stopped in the lungs. There was a very similar rise of temperature, with dyspnœa, on the nineteenth day, after which time patient gradually recovered, and was sent home quite well on March 9th, 1884.

Case X.—Mrs. S. S., aged thirty-two; admitted January 23, 1884; sent by Dr. Lyster, of Kilkenny. This woman was two and a half years married without having any children. Operation on February 19th. Unilocular cyst; no complication. Recovery perfect. Maximal temperature on evening of the operation, when it rose to 100·6°, and pulse 116.

Case XI.—Mrs. K., aged fifty. This woman was a former patient of mine in the City of Dublin Hospital, having been sent by Dr. Hugh Byrne, of Lower Baggot-street. She had been tapped three times, and for many months after the third tapping the abdomen did not increase in size.

She was operated on on March 25th, 1884, Drs. Bennett and Corley assisting. This was by far the most difficult ovariotomy I ever did. It was impossible to distinguish accurately which was peritoneum and which was the cyst wall. A considerable portion of peritoneum was, therefore, separated from the abdominal walls at the lower angle of the incision

before the mistake was discovered. The cyst was almost universally adherent, and failing to find the line of demarcation between the peritoneum and cyst wall, I passed my hand into the cyst, and tried to turn it inside out. While doing this my fingers passed through the cyst walls and got into the cavity of the abdomen. I was still, however, unable to distinguish the line of separation, and finally the cyst was removed piecemeal, numerous shreds remaining adherent to the abdominal wall. The peritoneum that had been separated from the abnominal wall at the lower angle of the wound was then carefully sewn back in its place, a drainage-tube inserted, and the abdominal wound closed. The operation lasted two hours and twenty-five minutes.

This woman had a quick pulse and a high temperature for some days, but finally made a thorough recovery, and I saw her some time ago, seemingly in perfect health.

Case XII.—K. K., aged twenty, single; admitted on July 8th, 1884; sent up by Dr. Cordner, of Aughnacloy. Operation performed on August 1st. Large multilocular cyst; some slight parietal adhesions. This woman made an unintrerupted recovery, the maximal temperature being 101° on the day after the operation.

Case XIII.—S. F., aged twenty-nine, single. Sent up by Dr. Palmer, of Crossmaglen, Co. Armagh.

On admission a hard tumour, the size of an orange, could be felt, rising out of the abdomen, just above the right Poupart's ligament. On making a vaginal examination this was found to be the fundus uteri, which was pushed upwards and to the right by a large elastic tumour filling up the left side of the pelvis. The girl was therefore put under ether, and on pressure being made on the tumour it suddenly rose with a jerk into the abdominal cavity, and the uterus fell down into its place. The diagnosis was therefore made of a small ovarian tumour, and, from the ease with which it could be moved about, it obviously had a very long pedicle. After the examination the girl's temperature rose, and as, from the length of the pedicle, and the globular shape, and very free mobility of the tumour, I suspected twisting of the pedicle, I determined to operate as soon as possible. The operation was performed on August 19th, 1884. The tumour was about the size of a child's head, and was of a dark blue colour, due to congestion caused by three or four twists on the pedicle. On the first day after the operation the temperature rose to 102·4°, but the next day it was down to 99°, and from that on was practically normal. This was the smallest tumour I ever removed, and it is hard to account for the length of the pedicle in any mechanical way, as the tumour was evidently fixed in the pelvis.

Case XIV.—Mrs. J. T., aged forty-eight; admitted September 20th, 1884, being sent by Dr. Atock. Had been tapped about ten days previously. Has had six children. On October 6th she was put under ether, and examined by the rectum, when the diagnosis of a left ovarian tumour, with a short thick pedicle, was made. The operation was performed on October 10th. As soon as the peritoneum was opened a large quantity of a thick reddish fluid escaped from the wound—evidently from some rupture of the sac. There were some very old and firm adhesions to the intestines, and the whole descending colon was attached to the cyst wall by more recent adhesions, the whole surface of which bled freely when separated. The pedicle was thick and short, and was tied in three pieces. The abdominal cavity was then sponged out, and while the abdominal wound was being stitched the woman ceased breathing, my attention being drawn to her condition by the very venous colour of the blood, which was escaping from the edges of the abdominal wound. She soon came round under artificial respiration, which did not interfere with the closing of the wound. At this time her pulse was 120, temperature 96·4°; but in the evening her pulse had fallen to 94, and her temperature had risen to 100°. Next morning the temperature was 99°, and in the evening 99·2°, which height it never again exceeded. This was, perhaps, the most perfect recovery I had ever had, after what, at the commencement of my career, I would have looked on as a fatal accident—viz., the free escape of the cyst fluid into the abdomen.

The strictest antiseptic precautions have been invariably practised at these operations, but lately I have not directed the spray on to the abdominal wound—indeed it is now chiefly used with the view of disinfecting the lookers-on. Mr. Lawson Tait has, it is true, obtained most excellent results without using any antiseptics, by operating, in fact, aseptically instead of antiseptically. But it is not everyone who can command such favourable surroundings as Mr. Tait; and for the great mass of the profession the use of antiseptics must, I fear, still remain a painful and troublesome necessity. No patient died of septicæmia, the only case I lost (No. 4) having succumbed to shock sixty hours after the operation. This gives a mortality of a fraction over seven per cent., which is, I think, an unusually favourable one to commence with; and, judging from the statistics of other operators, I am justified in hoping that, with increased experience, even this will be very considerably reduced.

I would here venture to suggest that, after ovariotomy, there are probably, just as after labour, two forms of septic poisoning—viz.,

hetero-genetic and auto-genetic, or, as I would prefer to call them, primary and secondary infection. The former is due to direct inoculation of the peritoneum with septic poisoning during the operation, and generally proves rapidly fatal; the second is due to the introduction of bacteria into the peritoneum. For these latter, however, to produce septicæmia it is necessary that they should find within the abdomen a medium suitable for their development. This is usually furnished either by cyst fluid, which has escaped into the peritoneum, or by blood from imperfectly-staunched adhesions, or, which is perhaps the most favourable of all, a mixture of blood and cyst fluid. Hence, the two great principles in operating are—first, to exclude all septic poison; and, secondly, to leave neither blood nor cyst fluid behind in the abdomen to act as a nutritive fluid for bacteria. In a paper by the late Dr. Marion Sims, in the *American Journal of Obstetrics* for April, 1880, in which he gives an account of his impressions after seeing Keith operate, he says:—"The lesson that I gathered from witnessing Keith's operation is—never to close the external wound till we have secured every bleeding vessel, every oozing point, and made sure that the peritoneum is perfectly clean and dry." We know now that the peritoneum is capable of absorbing large quantities of blood, as in cases of intra-peritoneal hæmatocele, and also of cyst fluid, as is shown by numerous cases of absorption and cure following rupture of an ovarian cyst. But if we leave no blood or other fluid in the peritoneal cavity, the chances of secondary infection are enormously reduced; in fact, it cannot take place except there is a secretion of fluid from the peritoneum, which seldom occurs. Now this whole question is very closely connected with the use of the drainage-tube. In three of the above cases (Nos. 2, 6, and 11) I inserted a drainage-tube at the time of the operation; in nearly every case, indeed I now think in every case, unnecessarily. For if the operation be performed antiseptically, the peritoneum is capable of absorbing any amount of fluid, or rags and tags of adhesions. In the two cases, on the contrary, where the drainage tube was inserted subsequently, I cannot but think that the patients would otherwise have di d; for in both cases the pulse had mounted to 160, and the patients presented all the appearances of rapid septicæmia. In both the symptoms had entirely changed within twelve hours after introduction of the drainage-tube. In the former of these cases (No. 5) very little fluid escaped through the tube out of the abdominal cavity, and I am at a loss what to attribute the favourable effect of the drainage to, except it be in

diminishing the intra-abdominal tension, and thus lessening absorption. In the second case, however, I removed for several days considerable quantities of pure blood. This was evidently acting as a nidus for the development of bacteria, and when it was removed their activity ceased. This view will, I think, explain how a drainage-tube may in some cases be of use, but in other cases quite fail to save the patient. This secondary or auto-infection may, I think, be produced by the action of ordinary decomposition bacteria on easily decomposing material, especially blood. Hence it follows that we should, as far as possible, prevent the entrance of air into the abdominal cavity as supplying one of the two links in the chain necessary to produce auto-infection. We should, therefore, before closing the abdominal wound, make firm pressure on the abdominal walls, in order to expel any air that has unavoidably entered the peritoneum. Air in a dry peritoneum is readily absorbed without producing any symptoms, and blood or cyst fluid in the peritoneum, if not decomposing, is also perfectly harmless, but, combined, they produce secondary or auto-infection.

Following the example of many other operators, I have discarded the waterproof sheet. The opening of the peritoneum is simplified by cutting boldly down to the sub-peritoneal fatty layer without using a director, raising the peritoneum between two pressure forceps, and then incising it. There is still considerable controversy as to the length of the abdominal incision. The old idea, however, that the length of the abdominal incision has a direct influence on the mortality is quite given up. Schroeder makes the incision in every case from the umbilicus to within as near the pubes as he can go without wounding the bladder, the position of which is known by holding up the abdominal walls to the light. This he does in order to have plenty of room, and to see exactly what he is doing. Mr. Lawson Tait, on the other hand, makes the incision as small as possible, on the grounds that a large incision is very likely to be followed by ventral hernia. This result, Schroeder says, he has never seen; and, as far as I can judge, the advantages of a large incision over a small one are very great. I would commence, in every case where there was a multilocular cyst, with an incision large enough to admit the whole hand.

A very serious question arises where the peritoneum and cyst wall are firmly adherent throughout the whole line of the incision. Here we may sometimes find the line of separation by enlarging the incision upwards. If this fail, we should boldly cut through

the supposed peritoneum. For if it turn out to be cyst wall no damage is done; but if, on the other hand, we mistake the peritoneum for the cyst wall, and, under this idea, separate it from the abdominal walls, very serious consequences may follow. One great help is to remember that the cyst wall is devoid of all fat, whereas the sub-peritoneal connective tissue is full of it. If we should be unfortunate enough to make such a mistake, we should sew the peritoneum carefully back in its place, as was done in Case XI.

The usual method of emptying the cyst is by plunging a large trocar into it. Schroeder, however, and many other operators incise it freely with a scalpel. Even if cyst fluid enter the peritoneum it will do no harm; though if the assistant keeps the abdominal wall pressed against the tumour even this is impossible. In any case, should nothing flow through the trocar it should be at once removed, the cyst wall incised freely, and the contents of the tumour turned out with the hand. In Case XI., while thus emptying a tumour, I pushed my hand through the cyst wall, and, before I knew it, had a firm grasp of the intestines. If I had not recognised them at once, the consequences would probably have been fatal.

Perhaps the most difficult point in a case of ovariotomy is the separation of adhesions, and stopping the hæmorrhage from the separated surfaces. Slight parietal adhesions may be separated before the tumour is lessened; but the golden rule is to bring all intestinal and omental adhesions into the abdominal wound while separating them, and, with the aid of our sight, at once tie or otherwise secure every considerable bleeding point. If this be not done at the time, these bleeding points are impossible to find afterwards, and are thus a frequent cause of auto-infection. Intestinal adhesions require the very gentlest handling, as they are often very firm, and, if roughly pulled on, the intestine will give way. We must therefore separate them, when firm, either by knife or scissors. A wound in the intestine is, however, by no means necessarily fatal if carefully sewn up, and we should always be provided with special needles and silk for the purpose. Oozing from large surfaces is best controlled by sponge pressure, or by a tight abdominal bandage. If in the abdominal walls, we can readily stop it by sutures surrounding the bleeding surface. Adhesions in the posterior *cul-de-sac* are peculiarly dangerous, because we cannot see what we are doing. Here sponge pressure is often of great service in stopping hæmorrhage.

The pedicle, if broad, should be tied in parts, as, if tied *en masse*, the peritoneal edges are very liable to slip out, which will cause secondary hæmorrhage. If there be no pedicle, as where the tumour is developed between the folds of the broad ligament, the capsule must be incised and the tumour enucleated. Olshausen, of Halle, has lately introduced the use of the elastic ligature for tying the pedicle. Up to April, 1884, he has used it in about eighty cases, and says the more he uses it the more he likes it. It certainly has the advantage that with it secondary hæmorrhage from the stump is almost impossible. The elastic ligature is returned with the stump into the abdomen, and causes no more irritation than the silk ones.

In one case, No. 13, there was commencing gangrene of the cyst from torsion of the pedicle; and, fearing this complication, I operated, though the patient had a temperature considerably over 100°.

As to the rest of the operations, little remains to be said. The toilet of the peritoneum is requisite exactly in the inverse proportion to our antiseptic precautions, and very nearly the same may be said of drainage.

In no case where there have been extensive adhesions, and hence, necessarily, oozing from large surfaces, should we omit to put some elastic dressing, such as carbolic tow or a large sponge, over the first dressing, and cover the whole with a firm bandage.

The after-treatment should be purely expectant. My rule in ordinary cases is to give nothing but small pieces of ice during the first forty-eight hours. If there be collapse, we should administer ether hypodermically rather than run the risk of vomiting by giving stimulants by the mouth. Pain and colic are best relieved by morphia hypodermically. The stitches should be removed on the tenth day, up to which time, if the case be going on well, the dressing need not be disturbed.

In conclusion, let me say that success in ovariotomy is not the exclusive possession of any class, whether they be surgeons or specialists, but will follow him most frequently who to quickness, gentleness, and strict discipline during the operation, adds a thorough knowledge of the various complications that may arise and the methods by which they have been met and overcome by other operators, and has, above all, a due appreciation of the value of antiseptics in abdominal surgery.

ART. VII.—*Hyperpyrexia in Rheumatic Fever.*[a] By J. MAGEE FINNY, M.D., Univ. Dubl., F.K.Q.C.P.I.; King's Professor of Practice of Medicine in the School of Physic; Clinical Physician to Sir Patrick Dun's Hospital.

THE temperature in rheumatic fever does not, as a rule, exceed the limits of pyrexia, and is usually under 102·5° F. It may occasionally reach 105°, but that it should persist for many hours at, or that it should exceed, this range is quite the exception. Nevertheless, acute rheumatism is one of the few diseased states in which the fever heat may sometimes reach 107°–108°, or even 110°–112°, and in these instances the state of hyperpyrexia becomes a source of the greatest danger to the life of the patient, and *that* in direct proportion to its height; so that if the temperature reach 108°, there seems to be little prospect of recovery, although the worst expectations have not been fulfilled in one or two recorded instances of such great hyperpyrexia.

The following case (reported by Mr. Robert G. Patteson, Resident Pupil) of exalted temperature in acute rheumatism was recently under my care, and illustrates many points of clinical interest bearing upon this rare and unaccountable complication:—

CASE I.—*Acute Rheumatism; moderate Fever; great Arthritic Pain; Sleeplessness; no relief from the use of Salicin; Delirium; Hyperpyrexia on ninth day; Temperature brought down by Iced Cold Pack; Recurrence of Hyperpyrexia on eleventh day; Heart failure and Death; no Peri- or Endocarditis.*—Richard S., aged twenty-five, a groom by occupation, was admitted to hospital on Monday, 17th of November, 1884, suffering from a severe attack of rheumatic fever of three days' duration. His illness began suddenly on Saturday forenoon with a pain in the back, which next attacked the ankles, and travelled thence up the legs. He has never had any previous illness, and none of his family had, to his knowledge at least, ever suffered from acute or chronic rheumatism. He attributes the present attack to wettings received in discharge of his duties.

On admission his temperature was 101·2°; pulse, 120. On being placed in bed he sweated a good deal. The bowels were constipated, and were freely moved by a simple enema. The tongue was covered with a thick "blankety" fur. The limbs, as far as the hips, were encased in cotton wool and flannel rollers. He had pain and difficulty in micturition before admission, but afterwards was quite unable to pass any urine. Hot stupes over the suprapubic region were tried without avail;

[a] Read before the Medical Section of the Academy of Medicine in Ireland on Friday, January 30, 1885.

and at 11 p.m. a catheter had to be passed to relieve his distress, which was not due to stricture. As he had not slept for two nights previously, a hypodermic of morphia was administered (♏ 3, inj. morph. hypoderm. B. P.).

Nov. 18.—Patient had a restless night, and slept but little; pains no better. He was ordered salicin—20 grs. every second hour—and was placed between blankets. The retention of urine was overcome by hot fomentations, but he has still great pain and hesitancy in micturition. Towards evening the rheumatic pains attacked the arms and shoulders, which were swathed in wool and flannel. He was very restless, and had not slept the previous night under the opiate. The hypodermic of morphia was repeated.

19th.—The patient slept fairly well, and is passing his urine more freely this morning. There has been no marked fall in temperature—100·7°; pulse, 124. The quantity of salicin was increased to 30 grs. every second hour, the effects to be carefully watched. He sweats profusely, and requires the wool covering the chest to be frequently changed. The heart is fairly strong, and there are no evidences of organic mischief. There is a good deal of effusion into the right knee, but he does not complain of any severely localised pain. 3 p.m.—The salicin seems to be agreeing well; temperature, 100·8°; pulse, 108. At 9 30 p.m. the temperature had risen slightly, and the pulse was quicker than in the morning, but there were no indications for stopping the salicin. A hypodermic of morphia (gr. $\frac{1}{4}$) was administered.

20th.—No marked change this morning, the temperature still continuing high. The salicin was stopped and replaced by pulv. ipecac. co. gr. 5, twice during the day, and gr. 10 at bedtime. The sweating has stopped, but the whole surface of the trunk and arms is covered with sudamina. There is less difficulty in passing urine. Towards evening, as the opium failed to relieve the pains or to cause sleep, and the pains were so violent, causing him to call out so loudly, $\frac{1}{3}$ gr. of morphia had to be administered to allow him and the other patients to sleep. There was slight delirium during the night.

21st.—Morning temperature about the same; pulse rather quieter. The opium was ordered to be continued during the day. Tongue dry and dirty. Complains of pains being worse than ever. Can now pass urine freely. 11 p.m.—Still very restless, impatient, and peevish, and in great pain. Temperature, 104·2°; pulse, 140. A hypodermic of morphia (gr. $\frac{1}{4}$) was given. Careful examination of the heart was frequently made with negative results, as far as organic disease is concerned. The urine, both now and on several subsequent examinations, was free from albumen.

Jan. 22.—Slept a little during the night. Temperature considerably lower this morning—102·2°. His bowels had been confined the last two

days, so he was ordered a haustus oleosus, after which they were moved four times—the first motion solid, the later ones fluid. The temperature still remaining high, quinine was ordered—5 grs. three times a day, alternating with a pill containing 1 grain of the aqueous extract of opium. The heart still remains unaffected, but there is a good deal of effusion into the knee-joints, the surface pitting on pressure in the neighbourhood of the knee. He is now again bathed in profuse perspiration, and the whole body is covered with sudamina (miliaria rubra et alba). His aspect is sallow and careworn, and he rambles at times. The urine and fæces are discharged involuntarily. Towards evening he was somewhat quieter, and for the first time since admission morphia was not administered.

Nov. 23rd (9th day).—Passed a restless night, was very delirious, trying to get out of bed. Forehead and cheeks flushed, of purple hue. Temperature this morning 103°; pulse, 116. Tongue dry and thickly coated. Ordered quinine (grs. 5), with hydrobromic acid (3½), three times a day, and the pills of opium as before. He rambled a good deal at times during the day. [On this day he reminded me very much of a case which I shall relate further on, and which ended fatally after wild delirium.] At 6 p.m. his temperature being 104·4°, he was given the second dose of quinine. At 8 p.m. the patient's condition was very serious, and he seemed fast sinking—was very delirious, and during the day had passed everything under him. At 8 30 p.m., the temperature still rising, he was given 15 grs. of quinine with hydrobromic acid; about 9, his temperature having risen still further (105·4°), cold stupes and ice-caps were applied to the head, but without effect. At 10 p.m. Dr. Finny came down, and an ice pack was applied with most marked and beneficial results. Towels wrung out of water, in which stood a block of ice, were applied *seriatim* to the head and neck, thorax, abdomen and legs, and lastly to the back, the patient being turned on his left side; and then, by the time the last towel was applied, those on the head and chest were warm, and required to be again changed, and so on. The packing was begun at 10 15 p.m., at which time the patient's temperature was 105·5°; the dyspnœa was excessive, and the pulse 160 per minute. The ice pack was continued half an hour, with the following results:—

10 30 p.m.—Temp., 104·8°; pulse, 160; resp., 44. 10.45.—Temp., 103·8°; pulse, 144; resp. 44. 11 p.m.—Temp., 101·5°; pulse, 132; resp., 36.

The benefit to the patient was magical. From being delirious, talking loudly, and calling out, he became rational, and said he felt better; his pulse was quieter and stronger, and his respirations, which had been very noisy, much slower and less laboured. A pericardial friction sound, which was audible in the nipple line in the fifth left costal interspace

very distinctly when the heart's action was excited before the packing, was hardly audible afterwards. At 11 30 p.m., half an hour after the pack was stopped, the temperature dropped to its minimum, 100·4°; pulse, 128; respirations, 28. At 12 30 the temperature continued the same; at 1 15 a.m. it had risen about a degree to 101·6°; at 2 it remained the same; at 3, 4 30, and 6 a.m., the thermometer registered 102°, and at this point it remained constant for some time.

24th (10th day).—The good effects of the packing remain, and the patient is much quieter and more rational, though he still rambles at intervals, and has not lost the purple-red blush on cheeks and forehead. He continues to take a fair amount of nourishment, and was ordered an egg beaten up with a little wine. Evening temperature, 101·8°. A rustling sound at the apex is the only physical sign noted.

25th.—Had a restless night, and was very delirious. Temperature, 101°; pulse, 128. Quinine was ordered in 3 gr. doses with tinct. iron perchloride (m. 12), three times a day. He continued restless and rambling during the day. In the afternoon he saw his wife, and shortly afterwards became very delirious. At 4 p.m. his temperature had risen to 104·1°; pulse, 148, and very feeble; respirations, 76. At 5 p.m. an ice pack was administered, which reduced his temperature 2°, and to a certain extent relieved the dyspnœa, though its effects were only temporary. A loud, creaking, pleuritic friction sound was audible to-day in the seventh costal interspace, about two inches external to the nipple line on the left side. The results of the second ice-pack were as follows:—

5 5 pm.—Temp., 104·1°; pulse, 150; resp., 76. 5 20.—Temp., 103·2°; pulse, 144; resp., 72. 5 35.—Temp., 102·1°; pulse, 136; resp., 60.; stopped ice pack. 6 15.—Temp., 102·5°; pulse, 148; resp., 68.

The effect on pulse and respiration was only very temporary, the dyspnœa even becoming as urgent as ever. At 10 p.m. the temperature had risen again to 103·5°, and the patient was manifestly sinking rapidly. At 12 the temperature was 105°, and the pulse 172; heart feeble and fluttering. An ounce of whiskey was administered, but without any marked effect. He was now wildly delirious. At 2 a.m. the temperature registered was 107°. At 3 it rose still further, to 108·4°, and the delirium gave place to convulsions of a very violent type. At 3 30 a.m. he died.

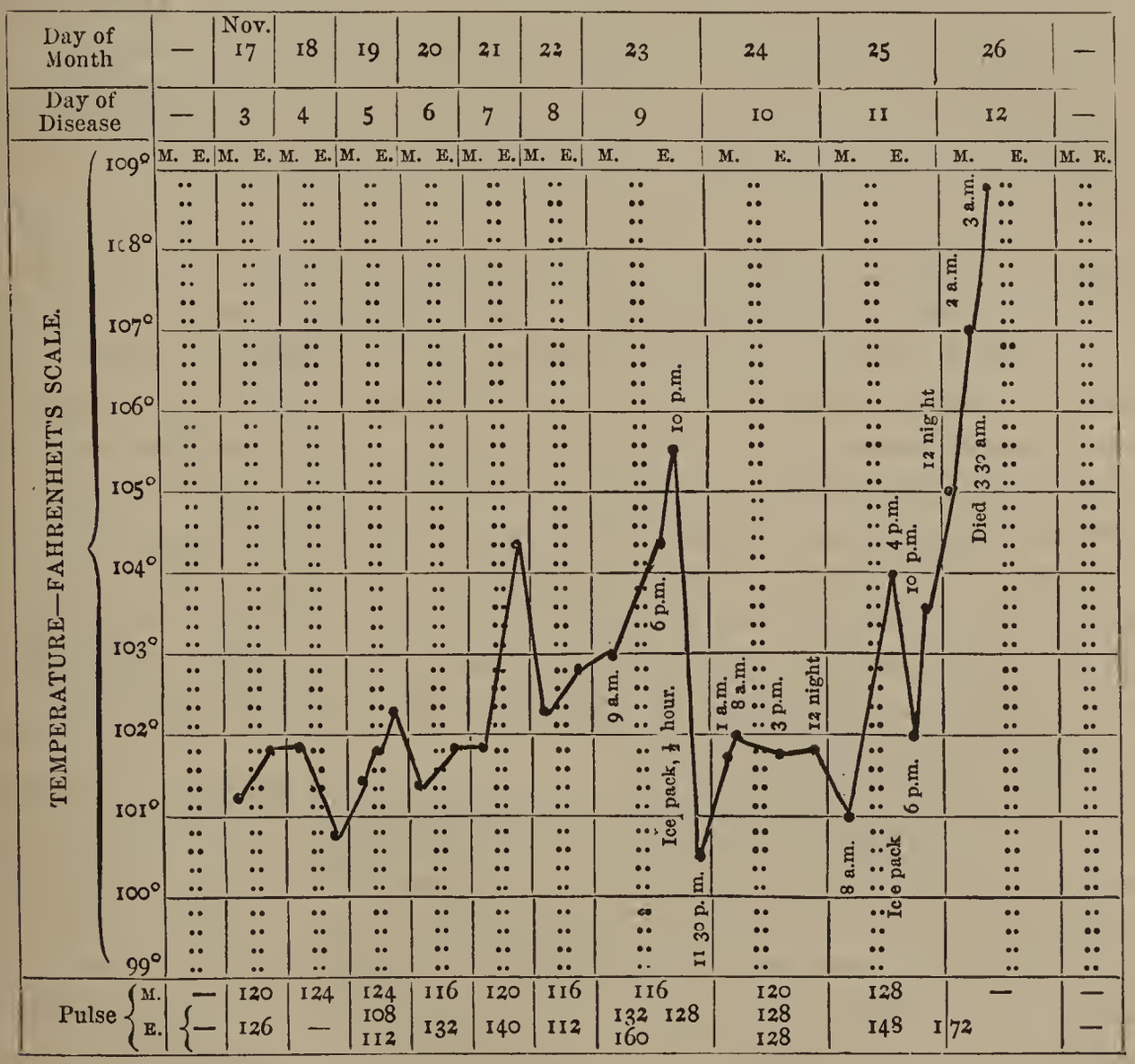
Autopsy, twelve hours after death.—A hurried and limited examination led to the following results:—There was no pericardial effusion, and the parietal pericardium was smooth and healthy. The lungs were, to all appearance, healthy, and were non-adherent, but were not removed from the body. There was no pleuritic effusion; no evidence of pleuritis on the visceral pleura. The heart was of normal size, and in normal position, and on its surface a number of "ink" spots were noticed. There were none on the parietal layer of the pericardium. The right side was

comparatively empty of blood, only containing a few soft, shreddy clots. The wall of the right ventricle was hypertrophied. The foramen ovale was more patent than is often found, but not sufficiently to allow regurgitation. The left side was normal. There was no evidence of endocarditis. There was no arterial degeneration. The other organs, including the kidneys. were healthy, but deeply congested.

The fluid effused into the knee-joints contained a small quantity of pus. The brain was not removed.

Chart of Temperature, &c.

Name, R. S.; *Age*, 25; *Disease*, Acute Rheumatism—Hyperpyrexia.



In July, 1881, I had a similar case of hyperpyrexia, and, although I have published it *in extenso* in the *British Medical Journal*, Vol. II., 1881, p. 932, I will ask your indulgence while I shortly summarise it:—

Case II.—*Acute Rheumatism; Pericarditis on seventeenth day; Hyperpyrexia and Coma on eighteenth; Iced Cold Pack; Immediate and Permanent Benefit; Disappearance of Friction Sound.*—The patient, thirty-seven years

of age, who was a mother of five children, had been a fortnight ill of well-marked arthritic rheumatism when she came under my care. During the first three days in hospital there was nothing to point to the case as being anything unusual. Pulse was 100–108; temperature, 101·8°–102·4°; the skin was perspiring, and the treatment consisted of salicin, in 15-grain doses, every third hour, and the joints were packed with wadding. On the fourth day a slight pericardial rub was detected. The temperature had gone up rapidly to 104·4° between morning and evening, and on the following morning it stood at 104·6°, and pulse at 114. Quinine in 5-grain doses was now administered every three hours, but without reducing the fever. At five o'clock that day the pulse was 136, and the temperature had run up to 107°, and seemed inclined to rise still further, being 0·2° higher twenty minutes after five o'clock.

The patient was partly unconscious; was wandering, complaining of no pain, while her face and lips were flushed, of a purplish hue, and her breathing was shallow, loud, and rapid.

Recognising the danger of the exalted temperature, I at once proceeded to reduce it in exactly the same manner as that already described, and with like immediate good effect. The temperature began to fall at once, was a degree lower in ten minutes, and in forty had fallen to 103·8°, while the pulse had sunk to 120. The flushed appearance passed away, the breathing was deep and natural, and the patient seemed drowsy, and complained of feeling cold. The cold applications were then removed, and at 9 o'clock p.m. (*i.e.*, four hours subsequently) the temperature had sunk to 100·6°, and pulse to 108. On the next day the morning temperature stood at 102°, and the pain was again complained of in the right ankle. The further course of the case was subfebrile, the evening temperature never passing 101·4°, and the patient made a complete, though tardy, recovery.

There is but one other point in this case to which I would refer, and that is the pericardial complication. An adventitious sound was noticed, on the day before the hyperpyrexia, at the base of the heart in the left parasternal line; it assumed a distinctly frictional character the day following; and after the cold packing it was still audible, but less marked, and presystolic in time. Twenty-four hours subsequently this physical sign disappeared, and was not followed by evidences of either effusion or endocarditis.

The foregoing cases are both typical examples of the peculiar state in which hyperpyrexia is the prominent symptom. Before, however, addressing myself to this special point, I beg to make a digression, and to call attention to the friction sounds of pericarditis which were heard in each case, especially in the last case. I felt so sure of the diagnosis that I should have been much

surprised if the pericardial sac had been found free from inflammatory exudation of lymph, and yet by the light of the *post mortem* revelations of the first case I am compelled to ask myself whether, after all, can a frictional murmur be produced by other causes than by pericarditis, or can it exist in the absence of exudation? Dr. Stokes[a] says on this subject of friction sound as a sign of pericarditis:—"From the rarity of death in the very first stages of the disease, it becomes difficult to declare that a merely dry state of the membrane (as Collin asserts to be the case) will not suffice to produce the sign" (friction), "and there seems no reason why it should not do so." . . . "Should the exquisitely smooth surfaces of the serous membrane, under the influence of inflammation, become merely dry, it is almost certain that some frictional phenomena would be developed, particularly in the pericardium, where the membrane is pressed upon by the comparatively firm and unyielding mass of the heart."

Were these two cases, then, instances of pericardial inflammation in the very early stage of dryness of the serous membrane, and was the inflammatory change checked by the revulsive action of the cold application, such as we see to occur in local inflammations of limited areas?

A very similar case of rheumatic fever, with hyperpyrexia (108·8°), in which wet packing and ice was applied with immediate and permanent good results, is recorded by Surg.-Major Quinton, Medical Staff.[b]

As, doubtless, many are aware, within the last two years a very valuable inquiry has been made into the subject of hyperpyrexia. A committee, consisting of Drs. Southey, Weber, Ord, F. Taylor, and Coupland, was appointed by the Clinical Society of London to investigate and to report upon the causes, consequences, and treatment of hyperpyrexia in rheumatic fever, and other acute febrile diseases. They submitted an intercurrent report on May 26, 1882, in which they limited their remarks to an analysis of 67 cases of rheumatic fever collected from various sources, and mostly unpublished. Although they have not as yet completed their labours, and reported finally, there is a great deal of most useful information to be derived from their report, and of this I have availed myself in my comments on this subject.

A statistical comparison of the number of cases of hyperpyrexia

[a] Diseases of the Heart and Aorta. Pp. 8, 9.

[b] Brit. Med. Jour. 1884. Vol. I., p. 1145.

with those of acute and subacute rheumatism admitted into the Middlesex Hospital between 1869–1880, shows that of the 1,300 cases treated during those years there were but 22 in which hyperpyrexia was present.[a] It is further noticeable that hyperpyrexia occurred more often in some years than in others, and that of the 67 cases which formed the basis of their Report, the Committee found that 81 per cent. occurred during the five years, 1873–77; and that rheumatism, although it was unusually prevalent in those years, was not proportionately so.

The mortality of these cases of hyperpyrexia is very considerable, as it seems to prove one of the chief causes of death in acute rheumatism, which ordinarily is a disease of favourable prognosis, so far as a fatal termination is concerned. Thus, of the 67 cases referred to above, 33 ended fatally, while the death-rate of acute rheumatism, during the same period, and exclusive of cases of hyperpyrexia, was only 1·8 per cent. In my own experience, I have lost but two patients suffering from acute rheumatism. They were both instances of great delirium and cerebral disturbance, and the temperature in one reached 108·4°. It was possibly high in the other also, but of this I cannot speak positively, as accurate thermometric observations were not taken during the fourteen hours preceding death.

Hyperpyrexia seems to occur frequently in cases of acute rheumatism in which complications have been noted, although the complications are none other than those we are accustomed to associate with that disease—viz., pericarditis and endocarditis, while pleurisy and pneumonia may be, not uncommonly, present in the hyperpyrexial state.

Dr. Francis Sibson[b] has collected 37 cases in which the temperature was excessively high, and about half that number were complicated by pericarditis. As pericarditis occurs but once in every five or six cases of rheumatism, it appears from this that the presence of pericarditis in a case of acute rheumatism increases the chance of the occurrence of hyperpyrexia with delirium and coma in the proportion of four or five to one. "It must not be lost sight of," he says, "that, as a rule, cases of acute rheumatism with pericarditis are in all respects worse than those without it, and that not only at the time of pericardial inflammation, but usually also before it. It becomes therefore a question whether

[a] Report on Hyperpyrexia, Clinical Society's Proceedings, 1882.

[b] System of Medicine. Reynolds. Vol. IV., pp. 270, 271.

or not the same severity of the acute rheumatism itself, which brought the pericarditis into existence, brought also the excessively high temperature with its attendant delirium and coma into existence, the two affections being affiliated and due to a common cause."

While therefore it may be assumed that, should complications exist in acute rheumatism, hyperpyrexia is relatively more likely to ensue, at the same time it should be distinctly affirmed that there is nothing in the onset, course, or type of the attack of rheumatism from which we can predicate the certainty of the temperature rising beyond its usual limits. It has been generally held, and one of the most current views is, that, should articular pain suddenly subside, and sweating be arrested, the occurrence of hyperpyrexia is to be expected, and it has been suggested that the latter symptom (arrest of sweating) may be the chief ætiological factor of the exalted temperature. Dr. Bristowe[a] writes—"The skin not only, as a rule, ceases to perspire profusely, but often becomes dry and harsh, and thereby some poisonous matter, which developed in the course of the disease, becomes retained in the blood and produces the hyperpyrexia."

Unfortunately for the verification of this theory, it was demonstrated that of the 67 cases referred to sweating was distinctly present in two-thirds, and sudamina were noted in 22, and that a dry unperspiring skin was present in not more than one-fourth of them. In both my cases sweating existed immediately preceding the occurrence of the hyperpyrexia, and sudamina were present in one.

It seems, however, that a closer connexion exists between cerebral symptoms—the most common being delirium—and hyperpyrexia than any other complication; that they may precede the onset of hyperpyrexia, accompany or follow close upon it; and that, so far as our knowledge goes, those instances in which the delirium precedes the high range of temperature are apparently the most serious, since of the three classes a greater number of deaths have been recorded under this variety than under the other two combined.

It should, however, be borne in mind that occasionally delirium may be wanting, while the temperature may reach 107°, and recovery has taken place; and, again, delirium and death have marked other cases where the temperature never reached any unwonted height.

[a] Practice of Medicine. Fourth edition.

The following case is one in point on this branch of the subject, exemplifying extreme delirium, coma, and death, without any cardiac complication, and without a recorded high temperature :—

Case III.—*Acute Rheumatism; Limited Arthritis with Purulent Effusion; Active Delirium; Rapid Pulse; Death on seventh day by Coma; no Peri- or Endo-carditis.*—A patient was admitted on December 29, 1879, into the City of Dublin Hospital under my care. He was unable to walk, and he hobbled into the waiting-room on two brooms, which he used as crutches. He appeared much exhausted by his exertions, and his face was covered with profuse perspiration ; the sweat was of a decidedly acid reaction. He complained of severe pains in both legs, but particularly in the left knee and ankle. The knee was swollen. The pulse was 140 as he sat in the waiting-room, and afterwards (when I saw him in the evening, after he had lain in bed for six hours) it sank to 120 ; it was full, but not so bounding as is usually found in rheumatic fever. Temperature, 102°. He was bathed in perspiration over every part of his body, and a strong smell of sweat was noticeable. His tongue was broad, thickly coated with yellow-white fur, but clean at the tip and edges ; it trembled somewhat on being protruded. There was no murmur over the heart, nor other adventitious sound. The symptom most remarkable was a curious restless look about the eyes, and a nervous quick way in which he replied to questions. As the pupils were dilated, and in the absence of photophobia and vomiting, or other evidence of surface irritation of the brain, and as the history pointed to alcoholic excess, the idea of meningitis was excluded, while particular attention was directed to the heart.

His history, as supplied by himself, was that he was a messenger, aged twenty-nine ; that on Christmas Day (five days before admission) he received a severe wetting, when he felt cold and shivering, but had no severe rigors at any time, and that he did not lie by till his admission, although his leg pained him a good deal. He did not sleep the night after admission, although he had a sleeping draught. On the following morning, though he complained of no headache, he seemed more excited, and was not perspiring so much ; his pulse was 152, and not so full ; temperature, 102°. No other joints were engaged. The heart's action was excited, but no murmur or increased area of dulness could be detected.

During the day he became more and more excited, rambling and talking, and in the evening he was in high delirium of the busy type, dealing with his occupation, and he had to be held in bed to prevent him getting out. His face was flushed, he tore off all dressings and applications, and he seemed not to feel pain in the leg. On examining the knee about 11 30 p.m., I found effusion into the joint and a brawny

swelling of the whole left thigh. I again examined the heart, but found no murmur; it was beating at the rate of 160. About midnight the delirium and noise diminished, a dusky and then a livid hue took the place of the flush in his face, and he gradually sank, and died at 1 30 a.m.

In treatment he had altogether taken about 120 grains of salicylate of sodium and 40 grains of salicylic acid.

Post mortem examination was made the following day, and the heart was the only organ which I was permitted to examine. I, however, tapped the left knee-joint, and drew off an ounce and a half of purulent fluid. From the bladder I got a small quantity of the urine, which exhibited a very decided amount of albumen, to one-fourth. The pericardium was healthy, containing a small quantity of serum which was not purulent (as tested by the microscope), but on the heart, towards the apex and over the back of the left ventricle, there were numerous inky extravasations, such as are found in death by suffocation. There was no valvulitis or ulceration, and the right side was full of black clot. The lungs, however, were not hypostatically congested, nor in any sense hyperæmic.

In the foregoing case the most prominent symptom was the delirium, which occurred without pericarditis or endocarditis; and, so far as our thermometric observations went—for, unfortunately, owing to the patient's extreme restlessness and violence, they were omitted the last day of his life—the temperature had not exceeded 102°.

The similarity of the general symptoms, nervous and thermometric, as well as their mode of onset, and their improvement or modification by the external application of cold to those produced by sunstroke or heat apoplexy, is so striking that one might, with Senator,[a] reasonably assume that all the grave symptoms are merely consequent upon increased heat of the body. The stern tribunal of facts disproves, however, the correctness of this view, since, as just now shown, a high temperature may exist without cerebral disturbance, and severe delirium, ending in death, may occur without, or may precede the advent of, hyperpyrexia.

A further point of great interest on this subject of the causation and intimate relationship of the delirium and the high temperature, and one which the cases I have read exemplify, is the absence of distinct visceral lesions in a very large number of the fatal cases in which *post mortem* examinations have been made. Pericarditis, often along with endocarditis, or endocarditis alone, is that most usually, but by no means invariably, found; while

[a] Ziemssen's Cyclop. Med. Vol. XVI., p 43.

inflammation of the meninges of the brain or spinal cord is almost entirely absent, or limited to a small area. We are, therefore, justified in concluding that cerebral symptoms, occurring in acute rheumatism along with hyperpyrexia, point rather to functional perversion of the brain than to structural changes in it or in the heart or pericardium, and that the high temperature and the cerebral symptoms are both alike due to one and the same cause, affecting the psychical and motorial functions of the brain in the one instance, and the centres (supposing such to exist) presiding over the production of heat in the other.

This leads me to remark how little we really know of the cause of fever heat, or the mechanism by which it is produced. It is not surprising that our explanations of these bursts of high temperature in rheumatic fever must be unsatisfactory and entirely theoretical, when even the causation of the regulation of the temperature of the body in health is a matter upon which diversity of opinion exists among the most distinguished physiologists. For instance, Senator, following on the tenets of Virchow's school, maintains that "the temperature of the body is a direct consequence of the chemical processes of life." Then Dr. Burdon-Sanderson[a] states that "at all times in the normal body the available means of heat-production is in excess of the demand," and supposes that any rise in temperature is at once automatically kept in check by the nervous system.

H. C. Wood[b] arrived at the conclusion, from numerous experiments on dogs, "that there are calorific nerves, and that a rise of temperature and heat-production, which follows separation of the pons from the medulla, is paralytic and due to the removal of some active force."

In a recent paper Dr. W. Hale White[c] adduces a series of cases of nervous diseases accompanied by variations of temperature, which bear out the results arrived at by physiologists by experiments on animals, and which point, from a clinical point of view, to the existence of a heat centre situated on the cerebral surface, adjoining the fissure of Rolando, as indicated by the experiments of Wood and Hitzig. He records cases of elevation of temperature to 107·4° in tumours of the brain, in the pons and its neighbourhood; to 109·2° (Gowers) and

[a] The Production of Heat in Fever. By W. Withers Moore, M.D. Brit. Med. Journ. 1884. Vol. I., p. 258.

[b] Guy's Hospital Reports, Vol. XLII., p. 75.

[c] Ibid, p. 49.

to 110° (Bastian) in hæmorrhage into the same locality; to 108° in softening of the pons (Mills); and to temperature varying from 106° (Churchill) to 110°–111° (Weber) in cases of fracture and injury of the spine. His conclusions are, that "these centres in the cerebral cortex are perpetually exercising a restraining influence in the temperature of the body, and that from them fibres go to the thermogenetic tissues of the body, passing near the central ganglia down the crura cerebri through the pons, decussating somewhere below that, and going by means of the medulla and cord to the tissues."

However plausible this theory may be, it fails to satisfy inquiry, and granted even that it hold good in cases of purely non-febrile diseases, will it help to explain the occurrence of fever-heat? Is this loss of nervous control the essence of fever? To these queries a negative reply must be given. Although this theory is advocated by Dr. Handfield Jones,[a] Dr. W. Withers Moore[b] temperately discusses this neuro-paralytic theory of fever-heat and discards it:— "The theory, then, that the liberation of heat at the surface of the body is controlled or restrained in fever, through disorders of the nervous centres, so that by 'retention' the temperature rises, must for the present be abandoned, until more reliable evidence can be adduced in its favour, and we are of necessity compelled to look upon fever as a disorder of protoplasm."

But even here difficulties beset our path, and no satisfactory solution of the problem is forthcoming. For, if the development of heat be owing to excessive combustion of protoplasm, whether due or not to the arrest of the inhibitory or check action of the nervous centre, "there ought to be a proportionate *débris* of combustion manifest somewhere if," as Dr. Moore puts it, "the fire have gone on burning in excess of the needs of the body from neglect of the regulator." And yet there is not found in many cases corresponding increase in the solids of the urine, or of the other excreta.

From what I have shortly stated it will be readily acknowledged that the subject is one of great difficulties, and that we must be content to observe and record such facts as come under our notice as clinical physicians, and await their elucidation in some future time at the hands of physiologists.

But few words are necessary on the subject of treatment in

[a] Med. Times and Gaz. 1877. Vol. I., p. 599.

[b] Loc. cit.

these cases of rheumatism complicated by hyperpyrexia, with or without nervous disturbance; not because the subject is one of little moment, but because the general consensus of opinion is in the direction of reducing the excessive heat in as short a time, and in as efficient a manner, as possible, although there may, however, be a difference of opinion as to the best method of attaining this end.

Antipyretics may act directly or indirectly, and, for the sake of description, may be classified into those which reduce the temperature in accordance with physical or physiological laws.

To the first class belong the direct and rapid cooling of the body by abstraction of its heat by contact, through the skin and mucous membranes, with surroundings of a lower temperature. To the latter class we refer medicinal remedies (quinine, Warburg's tincture, salicin and the salicylic compounds, aconite, and the ordinary diaphoretic and diuretic drugs of every-day use)—a long list, to which kairin has been recently added.

I have had no experience of kairin, but from what I have read of its effects I shall not expect very much from its employment.

I am aware of the very high opinion in which some practitioners hold salicin or the salicylic compounds as antipyretics in acute rheumatism, but I cannot unqualifyingly join their ranks. I have employed this class of drugs, and particularly salicin, as my routine treatment in that disease for many years, and in the very great majority of cases relief to pain and lowering of fever have followed its employment for a few hours or days; but, on the other hand, I have failed, in some instances, either to reduce temperature or to relieve pain by it when given in full doses.

An instance of this is at present under observation. A patient is in Sir Patrick Dun's Hospital in the second week of acute articular rheumatism. She suffered and complained of much arthritic pain, particularly in the ankles and knees, which are swollen. Temperature, 102°. Salicin in 20 grs. every third hour gave no relief; then in 30 grs. every hour for four doses, with a like result; and, lastly, 30 grs. every hour for six doses gave *no* relief from the pain, and reduced the temperature by but one degree. A second case occurred the following week, in which 40 grs. of salicin were given every hour for six doses, and then every fourth hour, without the least benefit to the pains or reduction of temperature. This I considered a fair trial, for, although Dr. Quinlan[a]

[a] Brit. Med. Jour. Dec. 6th, 1884. P. 1124.

has stated that he has given salicin without injury or any apparent effect to healthy individuals in doses of 120 grains, and that he has successfully treated rheumatic fever with doses of 50 to 60 grains every hour, I felt that my limited experience of the drug did not justify me in pressing the dose after reaching the limits laid down by Dr. Maclagan,[a] to whom the profession is indebted for this valuable anti-rheumatic, and which are worth recalling. He says :—"What I recommend is, that from 20 to 40 grains should be given every hour for six hours, or until pain is relieved (which it generally is within that time), and that the same dose should then be given every two hours till the pain is gone, and the temperature at or near normal (which is generally the case within twenty-four hours). After that the same dose is given at widening intervals of three, four, and six hours for ten or twelve days."

The effect of quinine on the hyperpyrexia of acute rheumatism is but slight, if indeed it will in any way check a temperature which is rising. It has quite failed to do good in my experience, even where, in one case, I employed four hourly doses of 5 grains each, and then one full dose of 20 grains. Indeed, from the analogy of its use in intermittent fever, no good can be expected of it if given while the fever is rising, however useful it is as a specific when given in the apyrexial intermission of that disease, or as a great aid to lowering the temperature which has commenced to fall.

The prompt and early application of cold to the surface is, therefore, the most valuable mode of treatment of the hyperpyrexia in acute rheumatism, as it is in the similar condition of insolation or heat apoplexy. The chances of its efficacy are greater the earlier it is had recourse to. The temperature cannot safely be allowed to rise above 105°.

Of the various methods of thus cooling the body by direct abstraction of its heat, the cold bath, cold affusions, irrigation by Leiter's tubes, and the application of iced cold cloths or sheets, are open to selection. In private practice, and where numerous assistants, necessary for the immersion of an adult in acute rheumatism in a bath, cannot be had, I have no hesitation in saying that the latter method (that by cold towels applied as I have described) is the one best suited to meet the requirements of the case. It is easily done, requires no skill, and is free from the objection and the risk

[a] Brit. Med. Jour. 1883. Vol. I., p. 713.

of frequent handling and lifting of the patient, which is inseparable from the use of the cold bath; the strength of the patient is thereby economised, and by its readiness of application the exact amount of good required can be more accurately gauged than by immersion in the cold bath.

While thus I advocate the employment of this severe remedy to meet an extreme necessity, I must not be understood to urge it as an antidote to the disease which called for it, and I by no means ignore the depressing effect it has upon the patient's strength. I desire, therefore, to lay special stress upon the right importance which should be accorded to this treatment. It may be the means of saving life, but it is only an adjunct to the general treatment of the patient. It is directed to meet but one complication of the disease, and it is a weapon of offence we must be ready to lay aside and take again as the necessity for it may arise.

ART. VIII.—*Three Cases of Ovariotomy.*[a] By WM. THOMSON, M.A., F.R.C.S.; Surgeon to the Richmond Hospital; General Secretary to the Academy of Medicine in Ireland.

THE subject of ovariotomy is one of such varied interest that for a long time to come it must continue to attract our attention. It is but the other day since its opponents were numerous and strong, and their obstinate refusal to countenance it or practise it seemed justified by the terrible mortality which attended its performance; yet now we count the cases by thousands, and with the increase of operators the death-roll has gone down steadily until it has reached a percentage which excites our admiration and amazement. What the causes are of this great revolution in abdominal surgery I will not now stop to consider in detail, but they may be summed up as in the first place due to improved methods of operating, and in the second to the attention which is now given to cleanliness in wound-treatment. Whether the surgeon adopts the Listerian principles or dressings, or does not, of this there can be no doubt, that in this department he tries to secure, perhaps more scrupulously than elsewhere, a cleanliness which even a few years ago would have been laughed at. The scoffers at Lister and his method have, at all events, been unable to hold out against that essential part of his doctrines, and at least the coarser parts

[a] Read in the Surgical Section of the Academy of Medicine in Ireland, December 12, 1884.

of surgical dirtiness have been recognised as grave dangers to the patient, and have been got rid of.

The cases which I have to submit to this Section of the Academy are very few in number, but they are all I can report at present; and as they were done under circumstances which have by some been held to be risky, I think we may gain something from a very brief record of them :—

Case I.—M. F., aged forty, married; sent to me by Dr. R. Saunderson, Rhode, King's County; admitted to the Richmond Hospital, June, 1878. She had had four children, and the tumour had been growing about two years. Fluctuation distinct. The tumour had begun in the left side; girth round the umbilicus, 40 inches; catamenia regular. The operation was done on the 23rd of June under spray; there were no adhesions; the pedicle was secured with silk, and the stump dropped into the pelvis. The fluid contents of the cyst amounted to about 12 pints. The wound was dressed next day, and then not for four days, when all was found to be united. The stitches were removed on the eighth day. The highest temperature was 101°. No symptom gave the least alarm, and the patient left hospital in five weeks, and returned to the country.

Case II.—B. M., aged twenty-five, unmarried; sent to me by Dr. R. Saunderson, Rhode, King's County; admitted 25th June, 1884. Patient thin, sallow, healthy; catamenia regular; some irritability of bladder; digestive, nervous, respiratory, and circulatory systems healthy; first signs of disease three years ago; no pain at any time; girth round umbilicus, 34½ inches; from ensiform cartilage to umbilicus, 7½ inches; from umbilicus to symphysis, 9 inches; from right anterior superior spine of ilium to umbilicus, 9 inches; from left, 9¾ inches. Operation performed on July 16. Eleven pints of fluid drawn off; no adhesions; pedicle on right side ligatured. Five sutures were inserted. The wound was dressed in forty-eight hours, and again on eighth day, when catgut sutures were removed. Wound quite healed. Highest temperature, 100·8°. Was allowed up on fifteenth day, and was discharged on the twenty-ninth day, well.

Case III.—M. L., aged thirty-two, unmarried; sent to me by Dr. Rutherford, of Ballinasloe; admitted November 5, 1884. Patient tall and well made; says she noticed the tumour beginning at her right side about two years ago. The swelling is about the size of an adult head. Fluctuation very faint; has had pain occasionally since March, 1883. The patient was seen in consultation by Dr. Kidd, who agreed as to the diagnosis. The operation was performed on the 14th November, 1884. There were adhesions to the anterior abdominal parietes, but they were easily broken down with the finger. The tumour was then

tapped, and $2\frac{1}{2}$ pints of fluid were withdrawn. This was black and coffee-like. The tumour grew from the right side. The pedicle was long, and was treated in the usual way. The highest temperature was 100°, and that only once. The pulse never rose above 80. The patient left bed on the fifteenth day, and is now—twenty-ninth day—leaving the hospital.

These cases, as I have said, are all in which I have performed the operation of ovariotomy, and they have been uniformly successful. The list is certainly not a very formidable one, looking to the large returns which are frequently published by some surgeons who specially devote their attention to this branch of surgery in England and on the Continent; but there are some reasons, to which I shall refer later on, why a general surgeon like myself should record his results, whatever they may be, in this department. Ten years ago any surgeon here would have justly exulted in the results I have noted, for the fatality then was great and almost deterrent; but we have learned, as all must learn, from the experience of others, and the improved treatment of wounds has helped, perhaps more than anything else, to establish the procedure as one of the least fatal of major operations.

All my cases, as were most of those of my colleagues, were operated upon in one of the medical wards separated from the surgical hospital. Each patient was given into the charge of one of the surgical nurses, who never left her until the termination of the case. My pupil gave up attendance upon other cases, no matter of what description. The patient was prepared by having a warm bath the night before, the bowels were cleared out, and the operation was performed at ten in the morning. The abdomen was cleansed with soap and water, and immediately before the incision the skin was washed with ether. The sponges were always new, and were prepared under my own supervision by steeping in a weak hydrochloric acid solution for twenty-four hours. They were then washed in dilute Condy's fluid, and next in a solution of oxalic acid. This bleached them thoroughly. They were next put into a two and a half per cent. solution of carbolic acid for twenty-four hours, and were ready for use. The carbolic spray was allowed to play for about half an hour before the operation, and when the patient was completely anæsthetised the visitors and students were admitted.

This practice is one which is condemned by many ovariotomists, who confine the spectators to half a dozen in number at most; but

with antiseptic precautions, and judging from my own and the cases of my colleagues, who have not lost one case from septicæmia, there does not appear to me to be any good reason for departing from it. If, as we shall presently see, so much stress is laid upon "experience" in this operation, there surely is the most powerful argument for the admission of students. So far, at all events, I have seen nothing to induce me to foster any idea of mystery about ovariotomy by doing the operation with "closed doors."

The pedicle was in each instance tied with carbolised silk. A needle was passed through the thin tissue, the two portions were tied separately, and then the whole circumference of the pedicle was included in a third loop. The tumour having been separated, the stump was dropped into the abdomen, and the wound closed after a final examination and mopping out of the pelvic cavity. No drainage-tubes were used. There were three dressings—the first in forty-eight hours, the second usually on the eighth day, when the carbolised sutures were removed, and the last about the tenth, when, the wound being firmly united, the gauze dressing was given up altogether. The patients were allowed to leave bed on the fifteenth day, and usually went home in about four weeks from the date of operation.

The conflict of opinion as to the treatment of the pedicle which for some years raged has ceased, and it has now come to be the accepted practice in the majority of cases to apply the ligature and return the stump into the abdominal cavity, instead of using the clamp and securing the stump surface external to the superficial wound. The experience of Keith, Knowsley Thornton, and Lawson Tait, has been altogether in favour of the intra-peritoneal method. Tait has argued very forcibly that the mortality of the operation was largely caused by the clamp, and his statistics and those of other surgeons go to justify that opinion, but at the same time it has not been by any means the sole cause. In the cases collected by Baum it appears that the mortality where the ligature was used was greater than with the clamp. Thus, in 875 cases in which the pedicle was clamped, 21·25 per cent. died; while in 746 in which the pedicle was ligated and dropped into the pelvis, 32·17 per cent. died. Such a high mortality as this, however, must have depended upon other causes than the mode of treatment of the pedicle—on hæmorrhages, septicæmia, shock, and the many accidents which may attend any wound. On the other

hand, Keith, Thornton, and Tait, who all tie the pedicle, have reduced their mortality to 5 and 3 per cent.—a series of results which are certainly unrivalled in any department of surgery. The return of the pedicle to the pelvis seems to be the natural and most scientific way of dealing with that part. To secure the surface of the stump in the abdominal wound, to leave it free to the accidents of an exposed cut surface, and thus to permit of the introduction of septic material into the peritoneal cavity, would appear to be one of the most certain ways of arriving at fatal results.

The drainage of the pelvic cavity after abdominal section is a further question of great moment. The fact that Keith practises it, and that Knowsley Thornton and Tait do not, shows a wide and remarkable difference of opinion among eminent specialists. It may be that in certain cases it is of advantage to have a drainage-tube in the pelvis, but in cases which are uncomplicated by many adhesions and consequent risk of secondary hæmorrhage it is unnecessary, and it is at all times a trouble and an absolute danger. The dressings require frequent changing, while everything should be left as quiet as possible; there is always risk of infection of the fluids when the tube is exposed to the air, and the tube itself must be a cause of irritation to the very delicate and sensitive structures with which it lies in contact. In 1881 Knowsley Thornton published a record of 150 cases. In these he drained twelve times, and lost 25 per cent. Four years ago Dr. Bantock, of London, published 75 ovariotomies, in which he drained eighteen times, and lost 27·77 per cent. In none of my cases was it used at all, because there were no adhesions sufficient to give rise to any serious hæmorrhage, and in none was there any symptom to make me regret that I had not used it. Our practice ought to be directed, as Mr. Thornton very properly says, to its abolition altogether; and although we may be prepared to admit with Mr. Tait that now and again severe cases will arise in which its use is necessary, we should direct every effort to avoiding its employment by securing all bleeding points, and thoroughly drying the cavity.

In Case No. III. the tumour was small, and when the patient was dressed she did not present any evidence of its existence. The question arose in consultation whether it ought to be interfered with, especially as its growth was not very rapid. There are cases of course in some of which increase of size is slow; in others the

tumour does not appear to enlarge at all beyond a certain point, and gives little or no inconvenience to the patient. But when we consider the probabilities of the progress of these growths, their liability to contract adhesions to the abdominal walls and viscera, and thus to increase immensely the risk to life should operation ultimately be undertaken—when we further think of the painful suspicions that so often attach to the subjects of these tumours, it does appear to me that, except under very special circumstances, relief ought not to be delayed. In uncomplicated cases the danger to life from operation is now very slight, and the sooner we anticipate difficulties in its performance the better.

I ought perhaps to close with these remarks upon the cases themselves, but the question has been very forcibly put to me in Mr. Lawson Tait's book—Ought I to have operated at all? Was I guilty of gross presumption, and did I unduly risk my patients' lives through my ignorance and want of experience? That is the charge which is brought against any general surgeon who ventures to intrude into the sacred precincts of what is now called specialism in abdominal surgery. Lest I should be regarded as overstating, let me quote Mr. Tait's own writing under the index-question—Ovariotomy: Who is to do it?—"I am also strongly of opinion that no surgeon engaged in constant attendance on the promiscuous cases admitted to a general hospital should perform such an operation as ovariotomy, and I look on it as mere foolhardiness on the part of anyone to perform it to whom it will probably never occur again to engage with such a case, or whose experience is likely to be limited to two or three such cases in a lifetime. It is an operation beyond all others requiring that readiness of adaptation for emergencies which wide experience alone can give. Its complications are far more varied and tax far more heavily the courage and presence of mind of the operator than those of any other operation in surgery, and one or two successful cases scarcely compensate for those which are unsuccessful by lack of experience."[a]

I admit that this is very astute, but it is not very flattering to my common sense to ask me to believe it. The assumptions are wrong and the reasoning is fallacious. May I ask upon what special grounds a general surgeon is to be excluded from operating upon the peritoneal cavity? Is it because of the danger of conveying infection? Then with much more reason he ought never

[a] Diseases of the Ovaries. P. 256.

to operate upon any other part of the body. The surface of a stump after amputation is much more susceptible of mischief than is the exposed peritoneum. If it is said that there are wounds in the divided pedicle, and the parts from which the adherent surfaces have been separated, weeping blood or serum into the abdominal cavity, it does not destroy my position. Upon this point Sir Joseph Lister puts the case clearly and truly:—"One great peculiarity of operation wounds within the abdomen as compared with those in ordinary situations is that the plasma from the cut surface is poured out into a large cavity lined with a serous membrane disposed to absorb it as fast as it is effused. Thus, without drainage or any outlet whatever for discharge being provided, the serum is, under favourable circumstances, prevented from accumulating, as it would in ordinary wounds similarly treated, and opportunity is not afforded for putrefaction."[a] Mr. Tait's doctrine, then, I submit, lands him in an inconsistency.

But, then, we are told that this "is an operation beyond all others requiring that readiness of adaptation for emergencies which wide experience alone can give." Now, so far as an uncomplicated case of ovarian tumour cyst is concerned, there are few things in surgery easier than its removal. The complicated cases are in the minority, and it is upon this smaller number of cases presenting difficulties, little and great, that Mr. Tait bases his warning. Does he seriously think that the possible complications of one of these cases may unnerve anyone but a specialist? Surely a surgeon in a general hospital, who is daily brought face to face with emergencies, whose wits and judgment are trained, by frequent exercise, to quick decision and action, may be intrusted with the treatment of adhesions of any kind in an abdominal case. To talk of excluding the general surgeon is to show forgetfulness of this fact, that it is from his enterprise and daring that the greatest advances in abdominal surgery have taken their start. When I mention incision of the kidney and removal of it, excision of portions of the stomach and the intestines, and suture of the bladder, as among his achievements, I think I may fairly claim for the general surgeon that *he has* "a readiness of adaptation to emergencies" with which the possible complications of an ovarian case cannot for a moment be compared.

But another ground of exclusion is want of experience. Says Mr. Tait:—"One or two successful cases scarcely compensate for

[a] Address at International Congress, London, 1881.

those which are unsuccessful by lack of experience." Now, an argument built upon such a statement as this unfortunately proves too much. Everyone admits the advantage of experience in all cases; but if it is said that one is never to operate until he has personal experience, the absurdity is obvious. Everyone must have his first case, and in order to do the best for it he avails himself of the recorded experience of others. Even Mr. Tait must have followed this course. No one can tell whether he will have one, or twenty, or a hundred cases of ovariotomy; and a surgeon would be doing himself wrong, and, even on Mr. Tait's showing, endangering some future patient's life, if, when the first case of abdominal section presented itself, he declined to operate because he thought he would never meet with any more.

Finally, Mr. Tait quotes Sir James Simpson to this effect:—"It was perhaps the only capital operation in which the surgeon was required to proceed upon the diagnostic knowledge of another party." This observation may have been true at the time it was written; but certainly there are few surgeons who are not able to diagnosticate an ovarian or an uterine tumour. It is not always easy, I admit, and even the specialists have to make exploratory incisions when in doubt. If Mr. Tait has to open the abdomen in a particular case to determine the position and character of a tumour, he is in no better position than myself, when I can explore the cavity with my finger. We are always glad to have the advantage of the opinion and advice of our distinguished gynæcological colleague, but I am sure he will not contend that the diagnoses were made solely by him. Even if Mr. Tait spoke correctly in this, it would not follow that the case ought to be given to the man who can diagnosticate it clearly. Diagnosis is but the first step, and there is much more than that necessary before we reach the position of the successful operator.

I have perhaps occupied more time than I ought in thus dealing with Mr. Tait's reference to general surgeons. But it was made once publicly in this hall, by himself, and it has been given all the circulation of his very valuable book on "Diseases of the Ovaries." Moreover, Mr. Tait is not the only one who holds the same opinion, and it is time, I think, that some protest should be made against a doctrine which is founded upon inaccuracies, and which has a tendency to growth. For myself, I do not care what line of practice a man may take, if he finds that the course of events leads him to it exclusively. But there are daily-increasing attempts to parcel out the body into special districts, and to put up notices

declaring that no one who does not devote his whole attention to some one of them may venture into it. It is to this only I object. There is no reason why a general surgeon should not enter upon any or all of them, if he feels that his knowledge justifies him. Nay, more, I would say that his familiarity with wounds and their treatment, and with the risks and dangers that lurk about them, his training of mind and eye and hands, all point to him as specially competent to deal with abdominal surgery.

NUMBNESS OF THE UPPER EXTREMITIES.

In the August number of the *St. Louis Courier* was an interesting note on a paper read before the College of Physicians of Philadelphia by Dr. Wharton Sinkler upon "Numbness of Upper Extremities." A very interesting paper upon the same subject will be found in the last Volume (XIX.) of the St. Bartholomew's Hospital Reports by Dr. Ormerod. The paper is entitled, "On a Peculiar Numbness and Paresis of the Hands," and details are given of twelve cases. Later on, the author mentions the name of "right palsy," given most likely to the same affection by Weir Mitchell in his book on "Nervous Diseases in Women" in the chapter on "Disorders of Sleep in Nervous or Hysterical Persons." Dr. Ormerod describes the symptoms as follows:—"They occur in women, usually about the climacteric age, and begin in the night. On waking, the patient has a feeling in the hands, or hands and arms (commonly of both sides), of numbness, deadness, pins and needles; sometimes there is actual pain, severe enough to wake her. There is also loss of power; the hands and arms become useless, and she cannot hold things. This may so far predominate that the patient comes to be treated for a supposed paralysis. Sometimes also the patients say that the hands swell, the veins swell, &c., at the time. The symptoms pass off in a little time, and rubbing suggests itself as a natural remedy. But occasionally they manifest themselves in the daytime also, and then principally when the patient sets about her ordinary work—washing, scrubbing, needlework, &c." The swelling of the limbs is very slight if present at all, but there is a sensation of bursting or fulness. The affection occurs chiefly at night, towards morning, and is more frequent after a hard day's work. In another part of his paper Dr. Ormerod adds:—"The women are generally over forty, about the time of the cessation of the menstrual function, though this is not always so. Some are, no doubt, hysterical, but there is, on the whole, less extrinsic evidence of hysteria than one would expect." "I have not yet seen a typical case in a man." Dr. Ormerod also agrees with Dr. Sinkler in recommending the treatment of this affection by friction and galvanism combined with the exhibition of bromide of potassium.—*St. Louis Courier*, Nov., 1884.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Pathologie und Therapie der Frauenkrankheiten (*Pathology and Therapeutics of the Diseases of Women*). By Dr. August Martin. Urban & Schwarzenburg. Wien. Illustrated. 1885. Pp. 419.

The work before us is not an exhaustive systematic treatise upon the diseases peculiar to women, but a handbook for the practical gynæcologist. Dr. August Martin is well suited to the writing of such a book; he has had much experience as a teacher in this branch of medicine, and his fame as a daring and successful operator has long since reached this country. The occasion of its publication was, he tells us, the oft-repeated wish of those who attended his vacation classes to have, in addition to the systematic treatises, a "clinical representation of gynæcology which should give diagnosis and treatment in as precise a form as possible without neglecting pathological anatomy or losing time in the confusion of controversy upon disputed points."

The work was compiled from shorthand notes of his lectures, which have been carefully revised by the author himself. The volume, though but a small one, is very full of original matter most suggestive to the practitioner in this special branch of medicine, and we regret that space does not permit us to refer to all the subjects of interest with which it deals.

Passing over the anatomy of the female pelvic organs, still unfortunately an inevitable introduction to all treatises on these subjects, however brief, we come to the examination of patients. For this purpose the dorsal position is recommended; the left lateral or Sims' position seems to our author rather to hinder than to favour exact manipulation. In bi-manual examination the more gently the parts are touched the more distinctly can they be felt, and this quite apart from the involuntary hardening of the abdominal muscles which always attends upon rough handling. Experience in this method will render it possible to palpate not

only the uterus and ovaries, but in a large proportion of cases the Fallopian tubes also. It has nearly abolished the use of the uterine sound, which is now seldom employed except for measuring the uterine and cervical cavities, or for correcting displacements when from any cause the digital method is rendered unusually difficult.

In order to diagnosticate and treat the diseases of the uterine cavity it used to be thought that dilatation of the cervical canal and the introduction of the finger were indispensable, and this operation was consequently one of the most frequent in gynæcological practice. That this is not still the case is chiefly due to the more extended use of the curette, which Dr. Martin and his former assistant, Dr. Düvelius, have done much to popularise (see "Half-yearly Report on Diseases of Women," *Dublin Journal of Medical Science*, July, 1884).

Dilatation of the cervix is now seldom resorted to by Dr. Martin. In the course of later years he has found it to be necessary only in order to remove tumours from the uterine cavity. The proceeding which he prefers for this purpose is that known to Germans as "the bloody method," by which the cervix is divided on both sides as far as the insertion of the vagina, and if the finger cannot then be introduced the sides of the canal are further incised to allow of its entrance. When the objects for which dilatation was effected have been attained, the wounds in the cervix are carefully sewn up again. This methed he considers superior to rapid dilatation by means of graduated sounds, such as Hegar's and Fritsch's, which, he contends, can act only by lacerating the tissues, and an incised wound is to be preferred to a lacerated one. Although Dr. Martin speaks so warmly in favour of dilatation by incision, he recommends it only to those who are experienced in the insertion of sutures in the neighbourhood of the uterus. When this experience is lacking he advises the use of sea-tangle. We do not feel ourselves competent to discuss with Dr. Martin the relative merits of dilatation by incision and by graduated sounds, but we cannot believe that the use of sea-tangle is either as safe or as satisfactory as the latter.

In discussing the causation of uterine anteflexion we first come upon the subject of supra-vaginal elongation of the cervix—a topic to which the author frequently recurs, and which with him amounts almost to a "hobby." This condition is the result of chronic cervical catarrh, and to it he attributes that peculiar form

of uterus resembling the infantile in shape, which we have been in the habit of regarding as congenital. In these cases the cervix is long and conical, with hypertrophy of the supra-vaginal portion and stenosis of the external os, the uterus itself remaining small and anteflected. In support of this view he states that he has often observed the previously normal cervix gradually assume this peculiar form when affected by catarrh. In treating this affection he has given up simple division of the cervix, preferring its excision, which he believes to be generally followed by reduction in size of the supra-vaginal portion. The results have been very gratifying, especially where the excision has been combined with curetting of the uterine cavity.

In the treatment of prolapse he strongly advocates operation. "In cases of descensus vaginæ," he says, "above all things I avoid the introduction of pessaries, since I have observed that they tend rather to aggravate than to cure the affection. Local treatment is unfortunately even at the present time only too often palliative. Although so many convincing reports of the favourable results of the radical method are before us, still practitioners point to the dangers and difficulties as well as the failures of operation as an excuse for persevering in palliative measures. The dangers of the radical treatment are quite insignificant, even though now and then the large raw surface should be infected. The difficulties are not altogether to be denied; they are, however, much less than generally reported, and vanish in comparison with the good results. These results are not, however, so universally satisfactory as could be wished. This is partly due to imperfection in the method of operation, but more frequently to the peculiar difficulties of the after-treatment. In both directions, however, we observe immediate failure constantly diminishing. There is another group of failures, however, in which, although at first completely cured, after a longer or shorter period the parts become stretched and the prolapse recurs." This had occurred in about 2 per cent. of his cases, but in many of these a second operation has been completely successful. Having performed this operation in upwards of 200 cases, he is the more decidedly convinced that it should be performed in all cases, except only where the debility of old age or constitutional disease would render the result doubtful, or where from any cause the long confinement to bed would be injurious to the general health.

These opinions will be fully endorsed by those acquainted with

the advances which have been made in recent years in improving the prolapse operations.

The diagnosis and treatment of the diseases of the uterine mucous membrane are simultaneously effected by means of the curette—the tissue removed by this means being amply sufficient for microscopic investigation. He has given up the use of caustics for the destruction of the diseased membrane, and in all cases so soon as he has failed to effect a cure by attention to cleanliness, improving the general health, vaginal injections, &c., he immediately proceeds to the removal of the membrane by the curette—no other method, in his opinion, yielding such good results. There is no danger of the membrane being replaced by cicatricial tissue, and thus nidation being prevented, for it has been abundantly proved that a perfect regeneration of the mucous membrane takes place.

In the treatment of uterine fibroids the employment of drugs internally has proved less efficacious than the prolonged use of mineral waters, such as those of Kreuznach, Tölz, &c., yet even those have, in his experience, been successful only to a limited extent; neither has the hypodermic injection of ergotin yielded as good results as have been reported by others. He has performed castration in this class of cases five times only, and though the results were favourable, yet he prefers the more radical and certain method of extirpating the tumour itself. The method by which this is accomplished varies with the nature of the case. Removal by the vagina is limited to cases in which the tumour is situated in the cervix, or if uterine is of moderate size only and protruding into the cavity as a polypus, or has been already half-expelled by uterine action. In other cases laparotomy is to be preferred. This having been performed, as in ovariotomy, and the tumour exposed, it is to be dealt with, according to the manner in which it has developed, in one of the following ways:—(*a*) In sub-peritoneal pedunculated fibroids the pedicle is to be ligatured and returned. (*b*) If the body of the uterus be so involved that it cannot be separated from the tumour, supra-vaginal amputation is to be performed, in doing which hæmorrhage is prevented by Esmarch's rubber-tubing placed around the cervix, which our author claims to have been the first (1876) to use for this purpose. The uterus is divided into lateral halves, and removed in such a manner as to leave an acutely wedge-shaped wound, the apex of which is within one centimetre of the tubing, and the sides sloping upwards and

outwards to about two fingers' breadth higher. The surfaces of this wound are brought together, and hæmorrhage prevented, by numerous deep sutures; the peritoneum is accurately adapted by superficial ones, and the tubing removed. A drainage-tube is invariably passed through Douglas' pouch into the vagina. (*c*) In some few cases it is possible to enucleate the tumour, and close the cavity left, without opening the uterus. (*d*) When the growth has developed downwards and outwards, between the layers of the broad ligament, the case presents extraordinary difficulties, both as regards the removal of the growth, which is but imperfectly differentiated from the surrounding tissues, and also in the control of hæmorrhage. The large excavations left used to be regarded as especially dangerous, and attempts were made to obliterate them by fixing the peritoneum to their base by various complicated methods of suturing. Lately, however, Dr. Martin simply closes the cavity towards the peritoneum and drains it into the vagina. It strikes us as remarkable that in discussing the removal of fibroid tumours by laparotomy, no allusion is made to the extra-abdominal method of treating the stump; and though we do not regard this method, which has yielded such admirable results in the hands of Hegar, as by any means obsolete, still each day we find it removed more into the background, and it now appears probable that the intra-abdominal is the method of the future.

The treatment of cancer, when detected in its earlier stages and the diagnosis confirmed by the microscope, should be the total extirpation of the uterus. When, however, the disease has spread beyond the limits of the cervix it should not be attempted. Then the diseased tissues are to be cut away as far as possible, and the hæmorrhage checked by suture. Although, formerly, Dr. Martin obtained good results from caustics, he has now given up their use altogether, because they do not with certainty control hæmorrhage, and the extent of their action cannot be exactly determined. Up to June, 1884, he had extirpated the uterus fifty-two times for malignant disease. In 40 of these cases the surrounding tissues were unaffected; in the remaining 12 cases they were diseased. Of the first group 4 died during or immediately after the operation; of the second group 8. Of the first 19 were operated on before the end of 1882; of these 16 are still alive, 8 of which are free from return. Besides these cases he has performed the operation three times on account of otherwise incurable prolapse, and five times for uncontrollable hæmorrhage

at the climacteric period. Of these 60 vaginal extirpations 13 ended fatally. Space does not permit us to discuss the subject of peri- and para-metritis, or the diseases of the tubes and ovaries, with which the work concludes, and which is by no means the least interesting part. We cannot, however, forbear mentioning the results of his ovariotomies, which are most instructive. Of his first 6 cases, performed before the introduction of antiseptics, he lost 3 = 50 per cent.; of the following 46 he lost 12 = 26·6 per cent.; of these 7 from septicæmia. This mortality he attributes to his assistants not having been sufficiently imbued with the necessity for extreme care in antiseptic details, to insufficient strictness with regard to on-lookers and the place of operation, and possibly also to imperfection in the mode of operating. Of his last 100 cases he lost 3, and of these only one from septicæmia.

We have read this book with much pleasure, and should welcome an English edition. It is very beautifully and instructively illustrated, many of the drawings having been executed especially for it by Dr. Carl Ruge from specimens provided by the author. The publishers, too, have turned out the work in a very creditable manner. W. J. S.

Fat and Blood: An Essay on the Treatment of Certain Forms of Neurasthenia and Hysteria. By S. Weir Mitchell, M.D. Third Edition, Revised, with Additions. Philadelphia: J. B. Lippincott & Co. 1884. Pp. 164.

Dr. Mitchell's treatment of cases of defective nutrition by rest, passive exercise, and dietetics is so well known, and has met with so much success, that it is unnecessary in noticing the third edition of his book either to describe the treatment itself or to expatiate on its value. The treatment is no doubt based on sound physiological principles, and to this the good results which have attended it are mainly due. We cannot, however, but think that some of its success is owing to its impressiveness, since an almost equal value has been claimed for other treatments, founded unquestionably on incorrect physiological principles, and having, in common with the Weir Mitchell treatment, only this—that they equally appeal to the imagination and stimulate the hopes of the patient and admit of a discontinuance of treatment by drugs. However, as Dr. Mitchell says, "quackery does not consist in the thing that is done, so much as in the spirit in which it is done," and the end

attained justifies even such treatment as nerve-vibration or metallotherapy.

The principles on which Dr. Mitchell proceeds in his treatment are, as is known, simple and intelligible. He separates the patient from her family and usual surroundings, and confides her to the care of a good and experienced nurse. He keeps her for weeks or months in bed, and at first does not allow her to read, work, or even feed herself. He employs methodical rubbing or kneading of the limbs and body, or what is known as *massage*. He also exercises the muscles by electricity. Finally, he feeds the patient at first on small quantities of skimmed milk, gradually increased, but soon advances to a very liberal dietary indeed. Of drugs iron is almost the only one employed. The carrying out of this treatment involves the strictest attention to detail, and the rules to be observed are most fully given in the volume before us. As will be seen, the most complete rest possible is given to the nervous system, while the injurious effect of rest on the nutrition of the body is avoided by the exercise of the muscles, brought about by their direct stimulation, independently of the brain or spinal cord, and the peripheral circulation is kept up by the massage.

The close connexion between fatness and a rich condition of blood, and between leanness and anæmia, is, we think, overstated by the author; and the coexistence of fatness and anæmia is, we believe, far more common than he admits. We also question very much his dictum as to the great fatness of English women as compared with Americans. He says:—"I think the first thing which strikes an American in England is the number of inordinately fat middle-aged people, and especially of fat women." We have frequently heard English travellers in America express surprise at the number of fat American women to be seen in all the hotels and public places in the States, and we ourselves have been struck with the same phenomenon.

As regards the diet by skimmed milk there is one point which deserves more attention than is given to it—that is, the extremely small quantity of solid matter which is given in such a dietary. When two or three pints of milk are given per diem it will be seen that there is a very slight call on the digestive organs, if it is considered that skimmed milk contains 88 per cent. of water, 5·5 per cent. of sugar, and only 4 per cent. of albuminous matter. It is no wonder, under such a dietary, that the urine becomes pale, that the uric acid disappears, that the creatine (which is not a

constituent of normal urine) and creatinine diminish. We are told nothing about the urea, but no doubt this also would be found greatly reduced. It is no wonder, too, that patients kept for some time on this diet diminish rapidly in weight, and in those cases where an increase has been observed it is, we think, most probably to be explained by a retention of water in the system. An interesting observation is that the usual odour of the fæces is lost while the patient is on a milk diet. This is in accordance with the discovery of Bienstock, who found that of the bacilli existing in the fæces only one decomposes proteids, but that this has no action on casein or alkali albuminate. Hence the absence of fæcal odour in the stools of sucklings. The good effects of milk diet which have been obtained in so many and various diseases might possibly be ascribed to this limited putrefaction which occurs in the intestine, for it would seem more than probable that serious symptoms sometimes arise from absorption of the products of intestinal putrefaction if their ready elimination by the kidneys is from any cause interfered with.

We cannot too highly recommend Dr. Mitchell's book to the attention of our readers. In order to understand the mode of carrying out the treatment, all its details must be studied carefully, and in the pleasantly and clearly written pages of the work under notice such a detailed account will be found as to enable anyone to select his cases and direct their treatment with success.

Diseases of the Spinal Cord. By Byrom Bramwell, M.D. Second Edition. Edinburgh : Young J. Pentland. 1884. 8vo. Pp. 359.

From its first appearance this book has met with the most unqualified success, as is shown by its immediate translation into German, French, and Russian, and by the speedy call for a second edition. This success is not to be wondered at when the many excellencies of the work are taken into account. Its most striking feature is the illustrations. There are few works on the nervous system which are so profusely and beautifully illustrated as this. There are 183 figures, many of them being chromo-lithographs, drawn by the author from his own preparations, the remainder being wood engravings, also for the most part original. Another feature is the number of tabular statements of the symptoms of the different diseases, in which tables those diseases which in any degree resemble one another are contrasted in such a way as to show at a

glance, and with the least possible trouble, the points in which they differ, and by which their diagnosis should be made. The volume is divided into four chapters. The first treats of the anatomy and physiology of the cord. The second of the general pathology of the cord, and of the alterations in function which result from lesions of its different parts. The third chapter, which is of great value, is on the method of case-taking, the clinical examination of a case of disease of the cord, and the general plan of diagnosis, prognosis, and treatment. In the fourth chapter the individual affections of the cord are described. These descriptions are short, clear, accurate, and to the point. It is true there is not much which is original or new, and not to be found in other works, but still, in its terseness and at the same time fulness, there are very few books on nervous diseases which will compare with this; and for those who have not time or opportunity for consulting the larger works Dr. Bramwell's book cannot be too highly recommended. To students, particularly, we would recommend it. It was originally based on part of the author's course of lectures on medicine, and although it has not retained the lecture shape, it still has that half schematic form which is so attractive and useful to beginners. We would call particular attention to the section on concussion of the spine, and on the examination of "railway cases." If the principles here laid down were acted on, a grave scandal would be removed from our profession, and the cause of truth and honesty, as well as that of science, would largely benefit.

RHINO-SCLEROMA.

IF a chronic affection of a wing of the nose, characterised by its becoming prominent, dense, feeling hard as ivory, resisting movement as if made of bone, the integument tensely drawn, giving a whitish glistening appearance, sometimes covered with confluent tubercles, painless, unless under deep pressure, never ulcerating even though a portion be excised (the wound heals quite readily), comes under your notice, and you can exclude syphilis, epithelioma, and keloid, you will have a very rare disease, rhino-scleroma. Dr. Knoche, of Vienna, has seen four cases, as mentioned in the *Kansas City Medical Index* for September. This disease sometimes invades the nares, pharynx, and larynx, and in the latter two events is always fatal. It is incurable.—*St. Louis. Med. and Surg. Jour.*, Oct., 1884.

PART III.

HALF-YEARLY REPORTS.

REPORT ON PUBLIC HEALTH.[a]

By Charles A. Cameron, M.D.; S.Sc.C., Camb.; M.K.Q.C.P.; Vice-President of the Institute of Chemistry of Great Britain and Ireland; Hon. Member, Societies of Hygiene, Paris, Bordeaux, &c.; Vice-President and Professor of Hygiene and Chemistry, R.C.S.I.; Medical Officer of Health for Dublin, &c.

SANITATION IN JAPAN.

We have been presented by Mr. K. Nagai, Secretary to the Home Minister, Japan, and Assistant to the Director of the Sanitary Bureau of that Empire, with the first four Annual Reports of the Sanitary Bureau of Japan. It may interest our readers to learn some particulars concerning the sanitary administration of a country which is now peopled by about 37 millions, and which has made greater strides in almost every kind of progress than has any other country in the same period in either ancient or modern times.

In 1873 the Japanese Government established a Bureau of medical affairs, which was directed to draw up a preliminary sanitary code. The Bureau, within the same year, presented a code of 76 articles; of these 11 related to the administration of sanitary affairs, and to the organisation of local sanitary authorities and the appointment of their officers, 24 dealt with medical education, 17 related to the examination of physicians and surgeons, and 22 to the examination of apothecaries and the sale, &c., of poisons, drugs, &c. It was at once decided that all the patent medicines and the nostrums of unknown composition should be analysed and their composition ascertained. This judicious proceeding has not been done by the authorities in any European State. It would appear that in Japan the use of nostrums is widespread, especially amongst

[a] The author of this Report will be glad to receive any books, pamphlets, or papers relating to hygiene, dietetics, &c. They may be forwarded through the agencies of the Journal.

the humbler classes, and is of great antiquity. This is only what we might expect in a country in which the practitioners of the healing art were chiefly quacks. The analysis of some of these nostrums proved that they contained poisonous substances, which accounted for the deaths of many persons to whom they had been indiscriminately administered.

In 1874 a laboratory (Thi-yaku-jo) was established for sanitary purposes in Tokio, the capital, and Dr. G. Martin, a German chemist, was appointed Foreign Director of it. In September, 1874, the information gained in the laboratory caused the Government to issue regulations for the sale of 31 kinds of medicine containing poison, but the regulations were for a time to be enforced only in the great cities of Tokio, Kioto, and Osaka. In the same year a "parc vaccinogène," or central office for collecting and preserving pure vaccine lymph, was established in Tokio.

In November, 1874, the local authorities of Tokio, Kioto, and Osaka were ordered to forward to the Home Department half-yearly returns, giving an account of the number and causes of deaths in those cities. The authorities were directed to advertise that the sale of adulterated quinine and iodide of potassium would be specially punished. It would appear that these two articles of the materia were both extensively used and extensively adulterated—the latter chiefly by the foreign manufacturers.

In 1875 Government chemical laboratories were founded at Kioto and Osaka, both under the direction of Dutch chemists, Dr. A. J. C. Geerts and Mr. B. W. Dwars. In this year it was notified that medical students would henceforth be examined in natural philosophy, chemistry, anatomy, physiology, pathology, pharmacology, and theory and practice of medicine and surgery, before being granted a licence to practise medicine or surgery.

In March, 1875, the authorities of the three cities above-named were required to carry out Articles 45 and 46 of the Sanitary Code, relative to the registration of cases of infective diseases and deaths therefrom. These articles require that every physician shall, within a specified time, report to the local authority the name and duration of the disease, and the cause of death in all fatal cases attended by him; and he was also to report every infectious case which he attended. Thus we see that in certain parts of Japan a compulsory notification of infectious diseases has been in operation for ten years.

In June, 1875, the administration of sanitary affairs was transferred

from the Department of Education to the Home Department, and shortly afterwards a central sanitary authority was created, and termed Yei-Sei-Kioku. In December of the same year those preparing for the profession of apothecary were notified that in Tokio, Kioto, and Osaka they would not be allowed to practise until they had satisfactorily been examined in arithmetic, natural philosophy, chemistry, pharmacy, and the art of formulary.

In 1876 the regulations affecting candidates for medical and pharmaceutical licences were ordered to be enforced throughout the empire so soon as the local authorities were of opinion that the local facilities for medical education were sufficient.

In February, 1876, the compulsory notification of deaths and diseases by medical men was introduced into all parts of the empire, "as these reports had proved very beneficial in the three cities."

In April a magazine was established to record the proceedings of the Sanitary Bureau, to publish the various sanitary regulations enacted by the central and local authorities, and to diffuse a knowledge of sanitary matters amongst the reading classes. It copies articles on sanitation from the European and American hygienic journals. In one of these magazines the names of poisonous medicines were published, and the maximal doses that could with safety be administered were given. About this time the Kioto laboratory was closed, and in place of it two new laboratories established—Yokohama and Nagasaki. This change gave employment to another Dutch chemist, Dr. G. F. Eykman. In 1879 there were 31 persons employed in connexion with the laboratories. Of these only the directors were foreigners, from which it will be seen that the Japanese have made great progress in the study of analytical chemistry. In 1879 the total number of employés in connexion with the Sanitary Bureau was 96—numbers which can most favourably compare with those of the sanitary staff in most European states.

We can give only a very meagre account of the matter contained in the four annual reports (the fifth has not as yet been published), but we may state, *in limine*, that with respect to the purely sanitary enactments, the law in Japan is in some respects more strict than it is in the United Kingdom. For example, there is an examination of colouring matters employed for various purposes, and none that are likely to be injurious to health are permitted to be used. In our country, notwithstanding the well-known injurious effects of arsenical colours in wall-papers, there is an unrestricted

traffic in arsenical pigments in Great Britain, and indeed in most other countries.

The central authority seems to have been urgent in forcing on the local authorities to provide sanitary staffs. In some instances the local sanitary work has been discharged by persons whose whole time has been devoted to this duty, but in other cases the sanitary work has been performed by officers who had other duties to discharge, owing, it is said, to the difficulty in procuring competent persons to act as health officers. In Ireland we find that in all the rural districts it is the relieving officer who is the inspector of nuisances, generally at the magnificent salary of £5 or £10 a year! In some Japanese communities Public Health Committees were formed, some of which were, however, subsequently dissolved, and their duties entrusted to paid officials.

We gather from these reports that the Japanese Government are determined apparently to replace the native and Chinese systems of medicine by the more scientific one imported from the West. The progress made in this direction has been most extraordinary when we consider how short a time has elapsed since the introduction of European civilisation into Japan. It appears that in 1878 there were no fewer than 32,503 physicians, of whom 21 per cent. practised according to the European system; of the latter 496 had been licensed after passing regular examinations. In the future no one will be permitted to practise until he has given proofs of ample professional study, and passed a satisfactory examination.

In 1879 the number of students in the public medical schools—which are chiefly attached to hospitals—was 4,313. There were in addition about 600 medical students studying in the University of Tokio, and an unknown number in private medical schools.

The registration of deaths in Japan has been only a short time in operation, and is consequently imperfect. In the year ended the 30th of July, 1878, the deaths registered (exclusive of those in a few islands) amounted to 405,931, out of an estimated population of 33,358,799, or in the ratio of 12·17 per 1,000 persons living. As in these countries, the rate was higher amongst males—namely, 12·55 per 1,000, and lower amongst females—namely, 11·78 per 1,000. In the district of the capital, Tokio Fu, where the registration was fairly carried out, the death-rate was 25·78 per 1,000.

The greatest mortality was caused by diseases of the organs of

digestion, whereas in these countries maladies affecting the thoracic regions are most fatal.

The following shows the mortality caused by each of the undermentioned classes of diseases per 100 deaths from all causes:—

Febrile diseases	10·06
Diseases of the respiratory organs	17·99
Diseases of the circulatory organs	0·78
Diseases of the digestive organs	25·77
Diseases of the nervous system	22·37
Diseases of the genito-urinary organs	2·30
Diseases of the skin	1·02
Syphilis	1·04
Diseases under surgical operations	1·93
Diseases unclassified	14·63
Causes unknown	2·13

As to age periods, 30·72 per cent. of the registered deaths were those of persons under 15 years; 26·61 per cent. were those of persons aged from 15 to 50; and 40·69 per cent. were of those above the latter age. In 1·98 per cent. of the registered deaths the ages were unknown. Deaths from diseases of the skin were most numerous amongst persons under 15—66·91 per cent., whilst to that class only 2·96 out of every 100 deaths from diseases of the genito-urinary organs were assigned. Diseases of the respiratory organs almost equally affect the three classes. Diseases of the circulatory organs were fatal amongst the three classes as follows:—9·92, 52·16, 36·20.

The following infective diseases prevail in Japan:—Typhoid fever, dysentery, small-pox, and diphtheria; cholera occasionally appears epidemically. Small-pox appears to be the most fatal of the zymotic diseases in Japan. The practice of vaccination has been in operation for some years, and, it is stated, with good effect. In 1875-6 the total number of vaccinations performed amounted to 1,011,915, whilst in the year 1877-8 the number rose to 1,721,602. Cows are inoculated with vaccine lymph, and from these animals abundant supplies of vaccine are obtained. Healthy and strong children under one year of age are periodically selected and vaccinated with lymph obtained from the cows, and the scabs are preserved with the object of always having a stock of fresh and effective lymph. The local authorities receive supplies of lymph gratis from the Central Bureau. We are informed that the experience of the physicians in Japan is favourable to the theory of

the efficacy of vaccination as a prophylaxis. Of the unvaccinated persons attacked by small-pox in 1878-9 56·17 per cent. died, whilst of the vaccinated persons affected with this loathsome disease only 24·32 per cent. succumbed to it. It seems, too, that most of the patients aged from one to three years were unvaccinated.

The percentages of fatal cases in the five zymotic diseases above mentioned was 20·48. Typhus fever is incidentally referred to, but no statistics concerning it are given. No reference is made in any of the reports to the existence of scarlet fever, measles, or whooping-cough as occurring in Japan; but an endemic, infective disease, termed *kakke*, is stated to be "the most fearful of all the diseases of the kind," and that it has been known in Japan from the earliest times. In 1877 the Government commenced to investigate its ætiology, and directed that returns of the cases of the diseases occurring in the army, navy, police, &c., should be regularly made. The Central Bureau has requested the local authorities to make similar returns for their respective districts.

Kakke is stated to be known in China and other eastern countries. It makes its appearance about the end of summer or the beginning of autumn, from which we infer that it is probably a malarial disease. 3,170 cases of it were reported in Japan during the latter half of the year 1878-9; the mortality was 12·33 per cent. It is to be regretted that some account, however slight, of the symptomatology of this disease is not given. We shall probably have the subject treated of more in detail in the next Report.

In concluding this brief notice of the Public Health and Medical Institutions of Japan, we must pay a tribute of admiration to the Japanese for the conspicuous ability and energy which they have displayed in organising so rapidly new and improved methods of medical education and sanitary administrations. Those good works have, too, been carried out contemporaneously with other vast improvements in their industrial arts, education, army, navy, police, and political economy.

(*To be concluded.*)

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ACADEMY OF MEDICINE IN IRELAND.

President—J. T. Banks, M.D.
General Secretary—W. Thomson, M.D.

SURGICAL SECTION.

President—E. H. Bennett, M.D., President and Fellow of the Royal College of Surgeons, Ireland.
Sectional Secretary—William Stokes, F.R.C.S.I.

Friday, December 12, 1884.

The President in the Chair.

Three Cases of Ovariotomy.

Mr. Thomson read a paper on three cases of ovariotomy, which had all been successful. [It will be found at page 126.]

The President suggested that the debate should be limited to the questions of specialism and drainage.

Dr. Atthill said the intra-uterine disposal of the pedicle was that almost universally adopted. Success depended on careful attention to details by which, whether the operation was done by a specialist like himself or by a general surgeon like Mr. Thomson, the result would be as good as was obtained in London or elsewhere. The first question of importance was as to the size of the tumour before commencing to operate. As the result of his experience, success was greater with a small than with a large tumour, and therefore he advocated early operative treatment. Another point of importance was the size of the incision. Mr. Lawson Tait advocated an exceedingly small incision; Sir Spencer Wells and others one of fair size. Having operated fifty times himself, he was decidedly in favour of a fairly large incision, but not larger than was absolutely essential to ascertain if anything was wrong. He objected to new sponges as hard to free them from sand, and on that account he used the same set of sponges, twelve in number,

again and again, first boiling them in 1 in 1,000 of corrosive sublimate, and keeping them in carbolic lotion. In a certain proportion of cases drainage was an advantage, and if used carefully there would be no bad result. While in favour of antiseptic precautions, he objected to the use of the spray as producing cold in the abdomen.

Dr. Fraser recommended liquid sulphuric acid for the purification of sponges.

Mr. H. G. Croly advocated ovariotomy by the general surgeon as one of the most simple operations in the whole range of surgery, and one, too, that ought to be performed not only in the presence of visitors, but of the students, as he did not approve of letting students fancy there was some mystery about it.

Mr. Stokes concurred with Mr. Thomson in the justifiability of the general surgeon undertaking ovariotomy. Of his last eight cases, six were in succession successful, and that demonstrated not merely the justifiability but the right on the part of the general surgeon to perform the operation. In all his cases he had made a free incision and used the spray, but he took the precaution of warming the carbolic solution. In the unsuccessful cases he employed drainage, but in the successful he laid it aside, and he believed the time was not far distant when drainage would be given up not only in ovariotomy but in most other surgical operations. Let precautions be taken, as Esmarch indicated, by securing every bleeding vessel and by sufficient pressure to render the wound dry—let what had been happily termed "the toilet of the peritoneum" be properly carried out, and drainage would become unnecessary. In his own cases what was called uterine epistaxis had been a source of anxiety. He asked whether or not that form of hæmorrhage occurred in Mr. Thomson's cases, and his opinion as to the desirability of checking it.

Dr. Barton said Sir Spencer Wells informed him that he used the Listerian method of dressing, which, while he could not say it made much difference in the result, made a very great difference in his own feeling of confidence. He did not allow the spray to play on the open peritoneum, as harm was sometimes done by reducing the temperature.

Mr. Corley remarked that a surgeon commencing to perform ovariotomy now was in a much better position than twenty years ago, as he had the advantage of the experience of all the operations done since.

Dr. Robert M'Donnell said Sir Spencer Wells informed him that there was no fever accompanying the operation when he used antiseptic precautions, and therefore he adhered to the antiseptic method.

Dr. Neville argued that specialists had the advantage of knowing better than the general surgeon how to treat contingencies, apart from the question of diagnosis. Epistaxis was common, and, in his opinion, did not much affect the result.

Mr. Kendal Franks said, though the development of ovariotomy was due to specialists, that was no argument why the general surgeon should not perform it. No hard-and-fast rule could be made as to drainage.

Dr. Henry observed that where there was a large amount of broken-down adhesions the drainage-tube was useful, it being impossible to tell how much the abdomen would take up.

Mr. Thomson, in reply, was glad Dr. Atthill concurred with him in the desirability of removing small tumours as soon as diagnosticated. Abdominal section was practically without risk—indeed, Mr. Lawson Tait had done ninety exploratory incisions. This was an answer to Dr. Neville's doubt as to the capability of the general surgeon to diagnosticate a tumour. When a specialist had a doubt as to the character of a tumour he did not hesitate to satisfy himself by making an incision, and therefore he was in no better position than a general surgeon It was most important that the sponges should be clean, and hence he used new ones, which he had put through a solution of hydrochloric acid for twenty-four hours to get rid of the particles of sand, and threshed and steeped again in water. In his cases he used the spray, but in the last he did not bring it directly over the wound. Epistaxis occurred in the last case; but as the patient had menstruated a week before the operation, he regarded the epistaxis as an irregular return of it, and in three days it passed off in the usual way. He testified to the success which attended Mr. Stokes' cases under the same circumstances noticed in his paper. He was in favour of the operation being done in presence of students as well as of visitors, but he preferred its being done in the ward than in the theatre to prevent any risk of contamination. He was glad to hear Sir Spencer Wells endorse the security of the Listerian method. While he did not say drainage should be done away, it ought to be diminished, the presence of the tube itself giving rise to irritation, and consequent effusion into the peritoneal cavity, which would countervail the advantages.

The Section adjourned.

MEDICAL SECTION.

President—F. R. Cruise, M.D.; President and Fellow, King and Queen's College of Physicians.

Sectional Secretary—A. N. Montgomery, M.K.Q.C.P.

Friday, December 19, 1884.

The President in the Chair.

Living Specimens.

Dr. R. A. Hayes—Lupoid (?) ulceration of the larynx. Mr. A. Benson—Primary lupus of the conjunctiva. Dr. C. F. Moore—A case of eczema capitis in an infant aged six months.

Specimen by Card.

Dr. Finny—Double pneumonia with pleuritis.

Lupus and its Treatment.

Dr. Walter Smith read a paper on the nature and treatment of lupus. [It will be found at page 89.]

Dr. Henry Kennedy said he had in his practice combined constitutional with local treatment; and of thermal applications he had used plain hot water, as hot as the patient could bear. In one case he established an issue in the patient's arm, which had the effect of keeping her face well for six years. All that time she wore the issue. Cod-liver oil was one of the best constitutional remedies. It was remarkable, as showing the constitutional history of the cases, that the moment the health became impaired the disease reproduced itself. He had used blistering with good effect. He inquired how far Dr. Smith had been successful, especially how long he had kept his patients well by the scraping treatment.

Dr. Arthur Benson alluded to some experiments made on rabbits by introducing pieces of living granulations, taken from the conjunctiva of a child suffering from lupus, into the eyes of the animals. One rabbit died after a week from hæmorrhage into the stomach. The eye was examined and found healthy. In the eye of the other rabbit there soon appeared patches of tissue of a yellowish colour, with a pinkish appearance very similar to what is recognised as tuberculosis of the cornea. After three weeks this animal succumbed to chloroform; and sections made from the enucleated eye by Mr. Abraham exhibited tuberculosis of the cornea and iris. Almost all the patients he had seen with lupus of the conjunctiva showed a marked tubercular tendency, but without lupus appearing elsewhere in the body.

Dr. Doyle said when he was a student lupus seemed to be a prevalent disease, but he had reason to think that in a number of the cases eczema had been mistaken for lupus.

Dr. Corley asked whether the presence of the bacillus was an accident or whether it was common to tubercular ulcers, as he was not so sure of the bacillary theory in this disease as some recent writers on the subject appeared to be. Having had a large experience in the treatment of lupus, he had tried several remedies—red iodide of mercury amongst others—but latterly he had chiefly employed the method of scraping with Volkmann's spoon, which, he thought, gave the best results. Still some of these cases returned after two or three months, when he had to repeat the scraping, the disease having reappeared. He therefore wished to know which class of cases would be most favourable for this plan of treatment. Undoubtedly, constitutional treatment, especially by cod-liver oil, was of great value in some cases.

Dr. Finny stated, as the result of his experience in several cases, that his treatment was chiefly scooping combined with linear incision. The class of cases in which he had adopted scooping was that where the lupus was in the tuberculated form, and not where it had formed large, thick crusts. Thus where the tubercle was disseminated, with a certain amount of skin between the patches, a good cicatrix might be anticipated. If a portion of skin apparently healthy, but not really so, was left without being touched with the nitrate of mercury, lupus nodules developed. In many cases the return of disease was due to the inefficiency rather than the inutility of the treatment. The intense pain caused by exposure to cold wind in some of his cases was relieved by the scraping process and linear incision and burning out every spot with nitrate of mercury. The lupus seemed to have a relation to phthisis and scrofuloderma, but their present knowledge was insufficient to enable them to speak positively on the subject.

Dr. Robert M'Donnell, having given the disease special attention, related the particulars of a case in which various remedies, including arsenic, had been tried without having given permanent relief, until eventually the patient was cured by the free use of cod-liver oil internally, but she died some years afterwards of phthisis, showing the tubercular character of the disease in her case. Whilst a student in Paris under Cazenave he had paid a good deal of attention to the disease. Cazenave observed a case of lupus of the face which became attacked by erysipelas, and, although fearing this complication would make the disease a great deal worse, to his surprise when it passed away the patient got rapidly well. Effects of this kind suggested the use of counter-irritants to imitate erysipelas; and Cazenave, after using a number of irritants for the purpose, gave a preference to red iodide of mercury ointment; but beyond comparison, the greatest improvement of the time in the treat-

ment of this malady was the scraping with the spoon and then rubbing the raw surface with a rough sponge. He had used this method a great many times, and had never been disappointed. There was a form of lupus in which if arsenic was given at all it should be in such doses as would produce poisonous symptoms to act as mercury does, where it was intended to produce marked salivation. It produced rapid improvement, but he could not say that a permanent cure was always effected.

Dr. Walter Smith, in reply, said the diagnosis of superficial lupus of the ear from eczema was shown by a loss of tissue when the crust was removed. So far as he knew, the bacillus was found only in affections tuberculous or scrofulous, and not in large ulcers, and therefore it could not be introduced from without. Lupus on a single surface like the cheek seldom ulcerated deeply, but when it attacked the nose it acted on both surfaces, and thus caused great destruction of tissue. He could hardly lay down a specific rule as to what cases were most suitable for scraping. Spots of lupus too small to be scraped he treated by drilling with a pointed piece of wood tipped with nitrate of mercury.

Hereditary Amaurosis.

Mr. John B. Story read a paper on hereditary amaurosis.

Mr. Swanzy having made some remarks in reference to one of the cases mentioned in the paper,

The Section adjourned.

DYSPNŒA IN BRIGHT'S DISEASE.

At the meeting of the Canadian Medical Association held in August, Dr. R. P. Howard presented the following conclusions regarding dyspnœa in Bright's disease:—1. That marked dyspnœa may occur in Bright's disease not due to gross lesions in heart, lungs, or pleura. 2. That it may be continuous or paroxysmal, the former being more frequent. 3. That these forms of dyspnœa may occur as the prominent symptoms, and may, without the examination of the urine, escape recognition of their cause. 4. That the Cheyne-Stokes respiration is often a symptom of Bright's disease in both the acute parenchymatous and chronic interstitial nephritis. 5. That the Cheyne-Stokes respiration is not always evidence that a fatal issue is at hand, as it may occur in a chronic form, and recur for weeks. 6. That the several forms of dyspnœa are due to the defective renal elimination, called uræmia. 7. That in the acute form, serious or fatal dyspnœa may occur from effusion into the submucous membrane of the larynx.—*St. Louis Med. and Surg. Journ.*

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

SESSION 1884–85.

President—JOHN FAGAN, F.R.C.S.I.
Hon. Secretary—WILLIAM G. MACKENZIE, L.R.C.P. & S. Edin.

Thursday, January 8, 1885.

The PRESIDENT in the chair.

President's Introductory Remarks.

The PRESIDENT said—On the very threshold of the New Year let me express the wish that it may be a happy, useful, and prosperous one for all of you; and that it may see our Society extending its usefulness, benefiting not alone its own members, but the whole profession within the sphere of its influence, and through them promoting the well-being, health, and happiness of the community in which we live. The year 1885 is a somewhat eventful one for this Society. After a lapse of twenty-three years it has, I hope, in its wisdom thought well of changing its abode. During that lengthened period it has carried on its work within the walls of the Royal Hospital—a congenial place, we must admit, for prosecuting its operations. But the council of your Society has for various reasons recommended the change, and this has been confirmed at a special meeting of the members. I sincerely trust that the change will be a beneficial one, and that the Society under its somewhat altered conditions will carry on its work with renewed and increasing energy. It is a somewhat strange coincidence that the last meeting of the Society in the place it occupied since its formation should be the last meeting for the year, and that the last minute signed should also terminate the book that holds the records of this Society since its inception. We are not alone turning over a new leaf; we are getting into a new book and a new domicile with the New Year. Let us hope that this marked change will be for the benefit of the Society, and that when the last page of this new book is filled in it will present a record of honest useful work that will redound to the credit of the labourers who took part in it.

It may interest some of you to hear the names of those who attended the first meeting of the "Ulster Medical Society," which was held in the General Hospital on the 4th May, 1862. There were present on that occasion—Professors Ferguson, Gordon, Reid; Drs. Browne, Murney,

Mulholland, Corry, Johnston, Magee, Stewart, Patterston, Pirrie, J. W. T. Smith, Wm. MacCormac, David Moore, Dill, Brice, Smyth, Bryce, M'Gee, Murray, Scott, Halliday, and Whitaker. And of the names I have mentioned the only one appearing at the last meeting of the Society, held in the Royal Hospital on December 23, 1884, is that of our respected and energetic ex-president, Professor Dill. To advocate the advantages to be derived from a Society such as this before such an audience would be a work of supererogation. Its usefulness is patent to all; but, while we admit its usefulness, I am sorry to say that the profession in Belfast does not enter as heartily and thoroughly into the practical work of the Society as the reputation of its members and the size and importance of the community wonld demand. If we look to the metropolis and provincial towns of the sister country, we find their Medical Societies—not one, but many—in an active and flourishing state, at which the leaders of the profession, both young and old, many at great personal inconvenience, are constant attendants. And if we notice the reports of those Societies in our weekly journals, we constantly meet with the names of such men as Sir James Paget, Sir W. Jenner, Sir Andrew Clark, Sir Jos. Lister, Sir W. Gull, Sir W. MacCormac, Mr. Bryant, Mr. Hutchinson, and other leaders of the profession, as presidents, readers of papers, or members taking part in the discussion. The benefit of the presence and the expression of the matured views of such experienced members cannot be too highly estimated. I entertain the hope that the meetings of this Society will be honoured as well as benefited by a larger representation of its senior members than it has been heretofore. The amount of clinical material available in Belfast is enormous, and this, it is to be hoped, will be turned to useful purposes.

We have, representing the various branches of the profession in this town, men of high culture and vast and varied experience, whose opinions in discussions on the subjects with which they have specially identified themselves would form valuable contributions to medical science. I can well imagine the benefits that would accrue to this Society and to the public by a discussion on such subjects as the present outbreaks of scarlatina and typhus fever, to the latter of which one of our active young members has lately fallen a victim. The diseases of the viscera offer another fruitful field in which we may labour with advantage. Physicians have brought the subject of diagnosis to such a high state of perfection that diseases of the hidden organs, hitherto obscure and ill-defined, can now be demonstrated with astonishing accuracy. Owing to the vast strides that are being daily made in this department of medicine and surgery, and the startling innovations in practice following one another in rapid succession, there will be no lack of interesting and useful subjects for discussion. Through the combined efforts of physicians and surgeons some very creditable work in connexion with abdominal and

chest surgery has appeared in the "Transactions" of this Society, and if, up to this, no novel instance in brain surgery—a subject so prominently before the profession at the present time—has been brought under your notice, I hope in a very short time to bring before you a case in which I trephined the skull for a brain affection in a child three years old. The patient has progressed favourably since the operation, now nearly three weeks past; and while not too sanguine as to the child's ultimate recovery, I have every reason to hope that I shall be able to show her to you when I am giving particulars of her case.

With a rich vein of material at its command, and with, as I hope, the active co-operation of all its members, both young and old, I see no reason, gentlemen, why the Ulster Medical Society should not hold a prominent place among similar institutions throughout the kingdom.

Early History of Medicine in Belfast. By Robert Esler, M.D.; Senior Physician to Ulster Hospital, Belfast.

The first mention of medicine and medical men in the history of Belfast is during a period of political repose. The Clan O'Neill had lost its power for the time. Sir Arthur Chichester had obtained a grant of Belfast in fee. Cromwell had implanted his rule in the land.

Ireland was divided into fifteen precincts, of which Belfast, with the three counties of Antrim, Down, and Armagh, formed one. Each precinct was put in charge of Commissioners with large powers, but on matters medical these Commissioners seem to have been in difficulties, and in reply to inquiries they are informed on 22nd September, 1651, that "If there be want of a doctor or apothecary amongst you, and you can find fit and able persons for that purpose, we leave to you the choice of them, and the granting of their salaries, only limiting you in this, that you exceed not £100 yearly to the doctor, nor £50 yearly to your apothecary."

The next mention of the healing art is amid the din of war and the carnage of contending armies.

Schomberg had landed 10,000 men at Bangor on 13th August, 1689, and William and Mary had just been proclaimed in Belfast, through which James's troops had recently marched.

This town became winter quarters in 1689 for the army which had been at Dundalk on duty.

Thomas Pottinger, the Governor, asserts that, at his own expense, he furnished a hospital and storehouse for the men on their return to winter quarters, and here the sick were attended to during the early months of 1690, and prepared for the deadly conflict in which they were so soon to be engaged on the banks of the Boyne.

The mortality at this *great* hospital, as it is termed, is almost incredible. Dr. Lawrence was despatched from the camp to take charge of

the sick, of whom, from Nov. 1st, 1689, till May 1st, 1690, 3,762 men died. The townspeople seem also to have suffered greatly. Ten or a dozen funerals of the residents passed through the streets in little more than an hour; yet at this time the town was only a cluster of thatched cabins.

The sanitary laws in force at this date are—

"No one to make dunghills to continue longer than three days in the open street before the door, or throw carrion, dying stuff, or any loathsome thing into the river, under a penalty of 5s."

"Complaints are made that great annoyance is caused by butchers suffering the blood and garbage of their slaughter-houses to lie in the street, and run in the kennels and ditches of the town, to the corruption of the river and annoyance of the neighbours, by reason of the evil and infectious smells; and it is ordered by the authorities that all blood and garbage be carried twenty yards beyond high-water mark, under a penalty of 20s."

Medical matters do not bulk largely in the records of the town at this period. Only after the establishment of the *News-Letter*, in 1737, can we trace medical history; and where matters medical *are* referred to, they are generally more amusing than instructive.

Medical men took good rank in the town about the end of the 17th century. In the funeral procession of the first Earl of Donegall, following the servants, mourning horse, and pennon, come the gentlemen, esquires, and then the "physicians," with knights, baronets, barons, viscounts, and earls next in order. The mantle, helm, and crest were borne by Mr. Tooley later in the procession, the same Mr. John Tooley being a "Chirurgeon."

The leading medical practitioner of the 17th century was Dr. Hugh Kennedy, who had been physician to the Earl of Donegall, from whom he received a legacy.

Dr. John Peacock was another important medical man; and, although he delayed the execution of his will till death overtook him, he had told his friend that he thought he had £500, which he directed to be divided among his three children, and that his eldest son should be bred a physician.

Dr. Alexander was a practitioner of some reputation at the beginning of the 18th century. At his funeral no less than nineteen "*cloakes*" were hired, according to the prevailing custom at the time; the large number indicated the respect in which the deceased was held.

In 1726 Dr. James Macartney was chosen "sovereign" of Belfast.

Towards the end of the 18th century several of the medical men of the town take a most prominent place in matters both civil and medical.

Dr. Marriot, who was a poet, entered the literary arena on behalf of the people. A few lines will indicate the spirit in which he wrote:—

"Of ancient tenants, the industrious race
Strongly attached to their forefathers' place,
Who, just to live and pay their Lord, make shift—
Now the unfeeling heart can turn adrift.
What are the crimes that to their charge you lay?
Fines you demand, and fines they cannot pay.
To crown the whole—each must his farm resign
Or tender down a most enormous fine;
Some of the tenants still remain that feel
Their wrongs, and can resist with Hearts of Steel."

This was one of the "Hearts of Steel" ballads.

Of the political writers of that period Dr. William Drennan was the ablest and best known. He was born in 1754, and was the son of Rev. Thomas Drennan, Presbyterian Minister, of Rosemary-street. After finishing his medical education, Dr. Drennan settled first in Newry, but soon removed to Dublin. After a long residence in the metropolis he came to his native town in 1807, but seems to have given himself more to public matters than to the practice of his profession—perhaps he was one of those rare men who could make both pay. His ballads are published in a collected form. In 1794 he was tried for a seditious libel and acquitted. During his residence in Belfast, Dr. Drennan was closely connected with every movement of a patriotic, benevolent, or educational character. He died in 1820, much lamented by a large circle of friends. Prominent on his tomb stands the word "Patriot."

Dr. Haliday was also, like Dr. Drennan, son of a Presbyterian Minister, of Rosemary-street, and was one of the best known literary men, as well as the most eminent physician of his time. He wrote a tragedy and many poetical pieces. He was the intimate friend of Dr. Drennan, and associated with persons of the highest rank in the country. Lord Charlemont, the Revising-General, always stopped at Dr. Haliday's when in Belfast. He was a prominent political figure, and unquestionably the most important factor in connexion with the "Hearts of Steel" movement. His private benevolence, liberal-mindedness, and genial disposition were widely known.

Dr. Drennan wrote to a friend asking what spiritual consolation Haliday had at his death. The answer is—"Three nights before he died Bruce and I played cards with him, and the very night that was his last he played out the rubber. 'Now,' said he, 'the game is finished, and the last act near a close.' He was helped to bed, spoke comforting words to his wife—and the rest you know."

Part of his last Will and Testament is so curious that I am tempted to quote it:—"I leave my wife a legacy of £100 by way of atonement for the many unmerciful scolds I have thrown away upon her at the whist table, and I further bequeath to my dear wife the sum of £500 in gratitude for her having never given me, on any other occasion from her early

youth till this hour, any just cause to rebuke or complain of her; and I further leave to my said dear wife a further sum of £100 as an acknowledgment of her goodness in devoting an hour or two every evening, which she could have so much better employed, to amuse me with a game at picket, when we happened to be alone, after my decaying eyesight would no longer enable me to read or write much by candlelight."

Dr. Haliday's principles were those of civil and religious liberty. He was a man admired, honoured, and beloved.

Dr. Joseph Black, of the Edinburgh University, an eminent chemist and philosopher of the last century, was son of Mr. John Black, merchant, Belfast.

The memoirs of three eminent physicians who began practice in the last century have been so well recorded by the late Dr. C. D. Purdon that I will largely use his words in referring to them.

Dr. James M'Donnell, a learned and deeply read physician, one of the M'Donnells of the Glens, was born in the year 1762, near Cushendall. He studied in Edinburgh, where he took his degree in 1784. He soon settled in Belfast, where he obtained a large practice. He cultivated a taste for literature and formed a valuable library. Many of his books were presents from grateful patients; amongst others the Marchioness of Londonderry presented him with a volume, on account of valuable advice in a recommendation to nurse her own children—thereby discouraging the pernicious custom of employing wet nurses.

He also formed a Museum of Natural History, and, in addition to giving much of his time to the poor, assisted Dr. Stephenson in forming a Fever Hospital and Dispensary.

He was the first to originate clinical instruction in the hospital in 1827. His appearance was well known to all, as he always dressed in drab-coloured knee breeches and white stockings.

When driving he might be seen sitting beside his servant, "Mike," reading a book through a magnifying glass. Mike was as well known as the doctor, and indeed always considered himself as the doctor's joint-partner; at any rate, he saved a matter of £1,100 while in the doctor's employment, with which he purchased a property in his native glens, where, in advanced life, he doctored his bucolic neighbours from old prescriptions of his master's which he had secured, and marked as *good* for certain complaints.

In 1828 Dr. M'Donnell was presented with a service of plate, value £700, by the nobility, ladies, and gentlemen of Belfast and its vicinity, as a tribute of their respect and esteem, and as an acknowledgment of his exertions on behalf of humanity, and his success in establishing the Fever Hospital and Dispensary. His son, Dr. John M'Donnell, of Dublin, gives a most interesting record of his father. He says that his father used to visit his grandmother at Cushendall regularly once a fortnight.

He left home at midnight, found a fresh horse at Glenarm, spent some hours lying on a sofa talking to his mother, and rode back to Belfast within the twenty-four hours—a ride of about 120 English miles. He died in 1845, in his 82nd year.

Dr. S. S. Stephenson, an eminent and most honourable physician, practised in this town in the latter part of the last century, and in the beginning of the present. In him was an illustration of how a man could change the current of great talents into a different groove from that in which, for a considerable portion of his life, they had been employed. He was educated for the ministry, preached first in Templepatrick, and was soon called to Greyabbey, where he laboured for several years with much acceptance. He employed his leisure time in the study of Archæology, and was esteemed a man of great learning and research.

Differing from the Synod of Ulster on theological matters, he resigned his charge, and in middle life went to Glasgow to study medicine. He took out his degree in the University, and came to Belfast, which at that time was a town of 17,000 inhabitants.

Dr. Stephenson soon obtained a foremost position in the profession and, in conjunction with Dr. M'Donnell, succeeded in establishing a dispensary, thereby relieving the Belfast Charitable Society of outdoor patients. Of the first sixty patients he attended in the Fever Hospital only one died. His reputation was established as a fever doctor—the first fever doctor in the town. Born, 1737; died, 1830; aged 93 years.

Dr. Forsythe was born at Ballynure in 1756; was educated at a country school, subsequently at Edinburgh University, where he took his degree. He commenced practice in Newtownards, but soon after removed to Belfast.

He seems to have been a rolling-stone, for he tried his fortunes in England, having succeeded in establishing two practices there, in which he amassed a considerable fortune. With this he returned to Belfast, and entered into partnership with Dr. Thompson. The partnership was soon dissolved, and he is next found engaged in mercantile transactions and speculations. He thoroughly understood human nature, and read his patients through and through.

He was tall and well proportioned, and his appearance commanded respect. He was a great politician, but would argue on either side of a question. When he retired from active practice he selected Holywood as the best locality for prolonging life, and whether to this or something else may be attributed the result, it was, however, attained, for he died at the age of 94 years.

So much for the medical men of the profession during the past century; and now we shall notice the medical charities in the order of their appearing.

The Belfast Charitable Society originated in an effort made in 1752 "to grant support to vast numbers of real objects of charity, for the employment of idle beggars, and for the reception of infirm and diseased poor." The first money for the purpose was raised by a lottery in 1753, and amounted to £1,736 2s. 4d.; in 1767 another lottery produced £1,462 14s. 11d., and from other sources the amount was made up to £7,592. In 1768 the Poorhouse scheme was assuming a substantial form when Lord Donegall granted the present site, about 8 acres, at a rent of some £8 a year. Subsequent grants of lands were obtained, making in all about 19 acres, for which a sum of £12 a year is paid. Much of this land is let for building ground, and is producing a large income.

The Society is also in receipt of £800 a year from the Water Commissioners; the right of supplying the town with water, having been also a grant, was held by the charity, and sold for the sum named. About a century ago all beggars were relieved by the Society; and a curious custom prevailed of granting licences to deserving poor persons to beg for a limited time. Poor beggars without such licence were punished, and men were employed to bring up such beggars as were found without a licence. Some curious entries are on the books.

One Dudley, a bang beggar, gets 1s. 1d. for bringing up a beggar; and in 1775 a notice appears offering 5s. 5d. for every beggar brought up after next Saturday. Balls were held monthly in the house for the benefit of the charity; tickets, 3s. 3d. Volunteers were exercised in the grounds; and a proposal was made to charge 2d. each to the inhabitants for liberty to wander through this delightful retreat, and relax themselves. By these means £250 per annum was added to the funds. The present income is about £3,000 per annum, and the number of inmates about 160.

For many years children were taken in and cared for, but as it was considered that the original object of the charity was to provide for old infirm, poor, but respectable inmates, the children's department was closed, and the whole house set apart for old residents of the town.

In this house cotton-spinning was first introduced in the North of Ireland; and here, also, vaccination was first practised by Dr. Haliday in 1800. Dr. Drennan had, however, tried inoculation in 1782. In the early days wards were set apart for lunatics; there were also a lock ward and a reformatory in connexion with the building.

Belfast Dispensary.—Previous to 1792 the Charitable Society was the only agency for poor relief and the treatment of disease, but the stringent regulations of the Society and the growing wants of the town led the benevolent public and the medical men to form another and a more general charity, which was called the General Dispensary. Dr. M'Donnell, who seems to have been the leading spirit of his age, entered

upon this scheme with all his zeal, and carried it on to vigorous maturity.

The medical staff consisted of:—Consulting Physicians, Dr. Haliday and Dr. Mattear; Attending Physicians, Dr. M'Donnell and Dr. White; Attending Surgeons, Mr. Fuller and Mr. M'Clelland. They had also an apothecary; and a house was rented in West-street, Smithfield.

Lying-in Hospital.—This charity seems to have been an outcome of the dispensary. It was established 1794, and first commenced in a modest way by renting No. 25, Donegall-street, at 12 guineas a year. The object of the charity was the relief of poor married women in their confinement. Three years after its origin a new branch was added, and for some years about twenty orphan girls were educated by means of funds saved from the working of the charity. This branch was abandoned, however, for another—namely, to attend women at their own homes, and for a time this practice was carried out. In 1830 the present building was erected on ground obtained from the Charitable Society; cost, £1,200. The medical practitioners of the town have at all times given their services here, as elsewhere, without fee or reward; and medical students have been admitted for many years—their fee going to the funds of the charity.

Fever Hospital.—In the Calendar of 1797, April 27th, stands this entry:—"The first hospital in Ireland for fever opened with six beds in Factory-row, Belfast."

The origin of the hospital was brought about by a variety of circumstances. The year was ushered in by a number of arrests for high treason; the country was in a most disturbed state; the French had landed in Bantry Bay; fever was appearing in many parts of the country; owing to political excitement, the collections for the dispensary dwindled; meetings were held which were poorly attended; but ultimately a house was taken in Factory-row, at £20 a-year, six bedsteads were ordered, and a nurse appointed.

On the 4th May, 1797, Dr. Stephenson and Dr. M'Donnell, as physicians, entered upon the medical duties of what turned out to be the small beginning of the present Royal Hospital.

During the remainder of that year the first sixty patients were treated, of whom only one died. An arrangement was entered into with the Charitable Society, by which fever patients were admitted from the latter charity, they on their part providing medicines, &c. At the end of about two years the charity seems to have fallen into disuse, for in 1799 it was revived, and a new house was taken in West-street, Smithfield, and a resolution come to that in future the committee should be summoned only on Sundays, at two o'clock, in order to secure a good attendance.

In March, 1800, Mr. Fuller, one of the original surgeons, died, and a

ballot was taken to decide which of three surgeons applying should be elected. Mr. M'Cluney was chosen. During the early years of the century frequent appeals were made to the public for funds, and various means were resorted to in order to keep the charity out of debt. Sunday sermons were commenced. The Second Presbyterian Congregation raised in 1806 £137.

From 1808 the Grand Jury of County Antrim presented sums equal to that raised by private subscription, and from 1817 an Act of Parliament enabled them to grant up to £500 per annum to fever hospitals. In 1817 the hospital was removed to its present site in Frederick-street, when the number of its medical staff was increased to four physicians and four surgeons.

The Belfast Medical Society.—In 1806 there were nineteen physicians and surgeons practising in Belfast, which had then a population of 22,000, and in that year was formed the first medical association under the above designation. The annual subscription was fixed at a guinea. A committee of six was appointed to manage the business, purchase books, &c. As this was the parent of the present Society, the names of the office-bearers may be mentioned:—S. S. Thompson, M.D., President; William Halliday, M.D.; William Drennan, M.D.; Robert Magee, M.D.; Robert M'Cluney, Surgeon; Andrew Marshall, Surgeon, Secretary and Treasurer. The Society continued up till 1814, having for its Presidents Drs. Halliday, Thompson, Drennan, and M'Cluney. For some years subsequent to 1814 the affairs of the Society were neglected, but, owing to the exertions of Dr. R. Stephenson, the Society was revived in 1822, and from that date we have a complete list of its membership. The leading names in connexion with the revived Society were Dr. Forcade, Dr. M'Donnell, and Dr. Halliday, with Mr. Moore, R.N., Mr. Bryson, and Mr. M'Cleery. With the experience of the past as to the liability of such a Society to lapse from lack of interest, it was proposed in 1825 to add a rule, which is still in force, and which has been, perhaps, one of the main factors in the success of the Society, and that was, that after twenty years' uninterrupted payment of subscriptions the member should be exempted for life from annual contributions.

One of the first objects the Society had in view was to procure new and expensive medical books, the purchase of which was usually beyond the reach of the majority of the profession.

Topics of local and general medical interest were introduced and discussed, such as the Medical Reform question of 1841, and the Medical Benevolent Fund Society of 1843, and, again, the Medical Reform Bill of Sir James Graham in 1845.

Medico-ethical points were also taken up and discussed, and on the question of the Irish Medical Charities the Society had a good deal to say. For twenty-two years the Society had been proceeding on the lines

indicated, and only in 1844 were papers read on medical subjects, and medical and surgical cases introduced.

In 1845 the practice was sanctioned of introducing pathological specimens at the meetings, and afterwards preserving them in a museum, under the direction of the Society.

A curious custom prevailed during the early years of the Society of electing as chairman the fifth member who entered the meeting. In 1844 a library committee was elected, and in 1850 the office-bearers were increased to the present number—viz., President, two Vice-Presidents, six members of Council, with a Secretary and Treasurer.

From 1850 the Presidents of the Society were the following:—Dr. Stephenson (three years in succession), Dr. M'Gee, Dr. Thomas Reade, Dr. Murney, Dr. Gordon, Dr. Stewart, Dr. Browne, Dr. Pirrie, Dr. Patterson, Dr. Cuming, and Dr. W. MacCormac.

The present rules of the Society are based on those of 1822, and the code of medical ethics published with the "Transactions" in 1879 is nearly the same as those drawn up by the fathers of the profession.

Medical Protection Society.—For some years, between 1850 and 1860, a Medical Protection Society existed, having for its President Dr. M'Gee, J.P., and Dr. S. Browne, R.N., Secretary. The object of the Society is clearly indicated by its title.

Belfast Clinical and Pathological Society.—Although I have been unable to lay my hands on the minute-book of the Clinical and Pathological Society, I have been able to collect the following facts from the printed reports of the Society's Transactions, and also from some of the original members who are still in our midst.

The Society was originated on the 2nd of September, 1853, with 49 members. During the following year 47 new members joined the Society, and in 1856 I find 109 members on the books, about half the number being from the country towns. The meetings were held every Saturday, at 3 o'clock, at the General Hospital. One of the main objects of the Society was the formation of a museum, and during the first session thirty-four donations were received.

I am enabled, from these old records, to lay before you a catalogue of the museum, with the names of the donors. The originator of the Society was Dr. Malcolm, who was also the largest donor, and one of the most liberal contributors to the ordinary work of the Society. Dr. T. H. Purdon was the first President, Dr. Halliday, Treasurer, and Drs. A. G. Malcolm and G. F. Wales, General Secretaries. The second President was Professor Ferguson, and in subsequent years the chair was filled by Dr. Cuming, Dr. Malcolm, Dr. Samuel Brown, R.N., Dr. Reid, Dr. Gordon, and Dr. James Moore.

This Society continued its operations till 1862, when its amalgamation with the Belfast Medical Society resulted in the Ulster Medical Society.

Dr. Malcolm.—Andrew George Malcolm, M.D., was born in Newry in 1818. His father was the Rev. Dr. Malcolm, the Presbyterian Minister of Dunmurray, and subsequently of Newry, where he died. After his demise the family removed to Belfast, and at the Royal Academical Institution Dr. Malcolm received his education. He graduated in Edinburgh in 1842, where he took a gold medal for an able treatise on "Fever." He commenced practice in this town, and soon became connected with the General Hospital. I may add that the qualification for becoming connected with the General Hospital in those days was a gratuitous attendance on the poor for two years.

He was a constant contributor to the various medical periodicals, but his *opus magnum* was the history of the Medical Institutions of Belfast, which is a work evincing great research. It is compiled in a most systematic manner. It was written for a *fête* which took place on the Queen's Island, and with the object of giving a more general interest in the institutions of the town, especially the hospital.

Dr. Malcolm was President of the Belfast Working Class Association, which had for its object "the advancement of such measures as may conduce to the physical, intellectual, and moral improvement of the working classes." For this Society he wrote, and on its behalf delivered public lectures

He was the founder of the Clinical and Pathological Society, and was its President at the time of his death. His last public appearance was at a conversazione of this Society in the Corn Exchange, at which most of the principal residents of the town were present. His herculean labours in connexion with the Society are recorded in the "Transactions," and his contributions to the museum are to be seen in our Pathological Rooms, most of the prepared specimens and the photographs being his gifts. In the year of his death the Society numbered over 100 members. In August, 1856, he was in delicate health and went for a change to Dublin, where he terminated a short, brilliant, and promising career at the early age of thirty-eight years.

Dr. J. S. Drennan, who was a fellow-worker, and who still remains as one of our Life Members, wrote of him :—

> "In mid course of a sublime career
> An active votary of virtue falls.
> Such Malcolm was—he scorned the level way,
> And followed duty up her heavenward hill ;
> Steadily working while it yet was day,
> The sudden night fell on him working still."

Dr. J. M. Sanders.—I am enabled, through the kindness of Professor Dill, to present the Society with a portrait of a young and popular physician who practised during the beginning of the present century. It was said at the time of his death, that perhaps never before, in the short

space of eleven years, had any professional man attained so high a place in the public confidence and esteem.

Born on April 24th, 1814, before he was four years of age he had lost both his parents, when a paternal uncle and aunt adopted him, and became responsible for his education and training. He was first at school in Glasgow, but at twelve years of age removed with his relatives to Belfast, and became a pupil in the Royal Academical Institution, where he continued till 1830. Having made choice of medicine as a profession, he studied in Dublin, Glasgow, and Edinburgh. He graduated in the University of the latter place in 1835, and at once commenced to practise in Belfast.

Dr. Sanders had a delicate constitution and a sanguine temperament. These factors, added to hard work in an increasing practice, told upon his frame, and in 1846, at the early age of thirty-two, while in the bloom of youth and with all the aspirations of rising fame, he was removed by death from the midst of a large circle of admiring friends. He had been elected Surgeon to the General Hospital, where he distinguished himself as a brilliant operator.

His funeral sermon was preached by the Rev. Dr. Morgan, from the text—"The beloved physician."

Dr. S. S. Thompson was one of the best known and most prominent members of the medical profession in Belfast for a quarter of a century. He was the son of an eminent physician in Coleraine; and, after taking his degree, Dr. Thompson commenced to practise in Magherafelt, but soon moved to Belfast, where he became connected with the General Hospital. Here he continued his services for twenty-five years. He was also Physician to the Lunatic Asylum for some time before his death. Few men were ever more truly loved and honoured by his fellow-townsmen than Dr. Thompson. By the members of his own profession he was idolised for the possession, in an eminent degree, of all those qualities which can attract and attach. In all public matters he was a prominent leader, and he was also a warm supporter of every public charity. As a platform speaker Dr. Thompson was always acceptable and graceful. In private society he was the delight of his friends, as he was a musician of a very high order of talent. He died of bronchitis, at his residence, Castle-street, on April 29, 1849, in his 72nd year. A bust of Dr. Thompson adorns the Pathological Rooms of this Society.

Medical Education in Belfast.—Previous to the establishment of the Royal Academical Institution in 1814, and the opening of the General Hospital to medical students in 1827, medical students from the North of Ireland obtained their qualifications in either Dublin, Glasgow, or Edinburgh.

For some years before the Queen's College was opened medical subjects were taught in connexion with the R. A. Institution, the teachers in the

several departments being transferred, in most cases, to the Queen's College as Professors.

In 1849 the Queen's College was opened "for the better advancement of learning among all classes of Her Majesty's subjects in Ireland." The first Professors in the Medical School were—Hugh Carlisle, M.D., Anatomy and Physiology; John C. Ferguson, M.A., M.B., Medicine; Alexander Gordon, M.D., Surgery; Horatio Stewart, M.D., Materia Medica; William Burden, M.D., Midwifery; Thomas Andrews, M.D., Chemistry. The Chair of Anatomy and Physiology is now occupied by Professor Redfern, the Chair of Medicine by Professor Cuming, the Chair of Midwifery by Professor Dill, and that of Materia Medica by Professor J. Seaton Reid. Dr. Andrews has resigned his appointment as Professor of Chemistry and Vice-President of the College, but is still a Life Member of this Society, and one of the most brilliant ornaments of his profession. Dr. Gordon retains his original appointment, and long may he continue to do so.

The influence of the Queen's College—on education generally in the North, but especially on medical education—has been very generally felt and recognised. The College was opened in 1849, and the first degrees conferred in 1851. On that occasion six of the first students obtained the M.D. degree, among them being two of our ex-Presidents—Dr. John Moore and Dr. Thomas Kennedy Wheeler. Altogether about 500 students in medicine of the Belfast College have graduated in the Queen's and Royal University during the thirty-three years of its existence, besides a large number who have obtained diplomas in Glasgow, Edinburgh, Dublin, and London.

At present the Royal Hospital is doing good work in offering means of instruction to students, and so, also, are the Ulster Hospital for Women and Children, the Belfast Hospital for Children, and the Eye and Ear and Skin Hospital.

The Belfast medical graduates have taken a foremost place in all the competitive examinations in the kingdom, and are found occupying posts of honour and distinction in almost every University, and certainly in every country where Her Majesty's Union Jack floats over a free and independent people.

This scattered and curtailed narrative of men and events brings us down to the origin of this Society in 1862.

We reserve for another paper the details of the various sessions, when we hope to not only review the principal medical events of the past twenty-two years, but to furnish a portrait of each of the ex-Presidents, which shall form a medical portrait gallery, to be handed down to the future generations, in connexion with the records of the Ulster Medical Society.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, M.D., F.K.Q.C.P., F. R. Met. Soc.

Vital Statistics

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, December 27, 1884.

Towns	Population in 1884	Births Registered	Deaths Registered			Deaths from Seven Zymotic Diseases							Deaths from Phthisis	Death-rate per 1,000	
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa		From all causes	From seven Zymotics
Dublin, -	351,014	648	824	130	229	–	8	31	3	14	14	10	105	30·5	3·0
Belfast, -	216,622	454	431	65	70	-	2	19	4	7	12	12	73	25·9	3·4
Cork, -	80,124	149	206	16	65	–	–	6	2	4	6	3	30	33·4	3·4
Limerick,-	38,562	62	74	7	37	–	–	–	–	–	2	–	5	25·0	0·7
Derry, -	29,162	61	33	1	13	–	–	1	–	1	–	-	6	14·7	0·9
Waterford,	22,457	34	34	6	13	–	–	3	-	–	1	1	3	19·7	2·9
Galway, -	15,471	28	20	4	8	-	–	–	–	–	–	-	4	16·8	0·0
Newry, -	14,808	18	20	1	6	–	–	–	-	–	–	–	3	17·6	0·0

Remarks.

It is necessary to observe that the occurrence of the Christmas Holidays in the last week of this period apparently interfered to a considerable extent with registration. This in a great degree explains a reduction in the death-rate in most instances during the week in question.

In the eight selected towns included in the foregoing Table the highest death-rates are 33·4 per 1,000 of the population annually in Cork, 30·5 in Dublin, 25·9 in Belfast, and 25·0 in Limerick; the lowest rates are 14·7 in Derry, 16·8 in Galway, 17·6 in Newry, and 19·7 in Waterford. The rate of mortality from seven chief zymotics ranged from 3·4 per 1,000 per annum in Belfast and Cork, 3·0 in Dublin, 2·9 in Waterford, 0·9 in Derry, and 0·7 in Limerick, to *nil* in Galway and Newry.

The recorded deaths represent a rate per 1,000 of the population annually of 22·2 in twenty-eight large English towns (including London, in which the rate was 20·9), 26·7 in the sixteen chief towns of Ireland, 34·3 in Glasgow, and 21·1 in Edinburgh. There is again a slight increase (from 21·7 to 22·2) in the mortality in the English towns generally; and in London it has also risen a little—from 20·3 to 20·9 per 1,000 per annum. It has again risen considerably in Glasgow

(from 29·4 to 34·3); and although still moderate it has risen in Edinburgh likewise (from 20·3 to 21·1). In the Irish towns the rate of mortality has fallen from 27·9 in the previous four weeks to 26·7. If the deaths (numbering 18) of persons admitted into public institutions from localities outside the Dublin Registration District are deducted, the death-rate of that district becomes 29·8, while that of the portion of the district included within the municipal boundary is 33·8. In London the epidemic of smallpox fortunately shows a tendency to decline, for although the deaths were 208, against 164, 97, 52, 61, 97, 185, 155, 85, and 46 in the nine preceding periods respectively, yet they numbered only 78 in the second fortnight, compared with 130 in the first two weeks of the period. The deaths from diarrhœal diseases in the same city, which numbered 63, 154, 272, 836, and 1,519 in the five preceding periods of four weeks, fell still further to 34.

Acute febrile zymotics were returned as the cause of death in 100 instances in the Dublin district, compared with 116, 118, 158, 206, 99, 76, 62, 84, 82, 71, and 72 in the eleven preceding periods of four weeks each, and a ten-years' average of 118·4 in the corresponding period. The 100 deaths included 31 from scarlet fever, 14 from "fever," 14 from whooping-cough, 10 from diarrhœal diseases, 8 from measles, and 3 from diphtheria. The epidemic of scarlet fever appears to be declining somewhat, the deaths being 14 fewer than in the previous four weeks. Of the 31 fatal cases, 9 occurred in the South City Districts, 17 in the North City Districts, 3 in the Donnybrook (Pembroke Township) District, and 2 in that of Rathmines. Of the 14 deaths referred to "fever," 6 were ascribed to enteric fever and 4 to typhus, while in 4 instances the exact nature of the fever was either not specified or was ill-defined. The deaths from fever were 5 less than those registered (19) in the previous period. Nineteen children under five years succumbed to scarlet fever, including 2 infants of less than twelve months. All the 14 victims of whooping-cough were under five years of age, including 4 infants of less than twelve months old. Among the 10 victims to diarrhœal diseases were 6 children under five years, and of these 2 had not reached the age of one year.

Measles caused 8 deaths in Dublin, and 2 in Belfast. In the former city this disease is beginning to display a decidedly epidemic tendency.

Scarlet fever was fatal in 19 instances in Belfast, the deaths being 22, 17, 15, 11, 6, 1, 5, 9, 9, 12, and 14 in the eleven previous periods. The deaths from this disease fell from 3 to 1 in Derry. Diarrhœal diseases were credited with only 26 deaths in the eight towns, against 45, 72, 120, 207, 57, 14, 26, 24, 32, 24, and 28 in the eleven previous periods of four weeks each. In London the weekly registered deaths from diarrhœal diseases were 12, 6, 9, and 7 respectively.

In the Dublin Registration District 648 births and 824 deaths were

registered, compared with 767 births and 830 deaths in the previous four weeks. The births were those of 320 boys and 328 girls. The deaths of infants under one year fell from 145 to 130; those of persons aged 60 years and upwards rose from 171 to 229.

The deaths referred to pulmonary consumption in the eight towns were 229, compared with 191, 158, 192, 182, 197, 243, 216, 244, 243, 212, 220, 189, and 170 in the thirteen preceding periods of four weeks each. In Dublin diseases of the respiratory organs are stated to have caused 192 deaths, against 181, 128, 94, 91, 64, 92, 108, 172, 155, 126, 157, 161, and 185 in the thirteen preceding periods, and an average of 239·5 in the corresponding four weeks of the previous ten years. The 192 deaths included 133 from bronchitis (average = 177·7) and 34 from pneumonia (average = 29·7). Of the 133 persons who succumbed to bronchitis, 25 were infants under twelve months, whereas 39 had passed their sixtieth year.

On Saturday, December 27, 1884, there were under treatment in the principal Dublin hospitals no cases of smallpox, 4 cases of measles, 52 of scarlet fever, 26 of typhus, 30 of enteric fever, and 13 of pneumonia.

The mean temperature of the four weeks was 41·4° in Dublin, 40·2° in Belfast, 44·1° at Roche's Point, Co. Cork, 37·9° at Glasgow, 38·1° in Edinburgh, and 41·7° at Greenwich. The minimal readings of the thermometer in the screen were 27·3° in Dublin, 28° at Belfast, 31° at Cork, 20·0° at Glasgow, 23·0° in Edinburgh, and 28 7° at Greenwich.

The weather was exceptionally warm and stormy during the second week of the period, quiet and cold during the fourth and last week.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N. Long.* 6° 15′ *W., for the Month of December*, 1884.

Mean Height of Barometer, - - -	29·815 inches.
Maximal Height of Barometer (on 21st, at 9 p.m.),	30·400 ,,
Minimal Height of Barometer (on 19th, at midnight),	28·909 ,,
Mean Dry-bulb Temperature, - - -	41·2°.
Mean Wet-bulb Temperature, - - -	39·3°.
Mean Dew-point Temperature, - - -	36·9°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·223 inch.
Mean Humidity, - - - - -	85·1 per cent.
Highest Temperature in Shade (on 13th), - -	56·4°.
Lowest Temperature in Shade (on 22nd), - -	27·3°.
Lowest Temperature on Grass (Radiation) (on 22nd),	23·4°.
Mean Amount of Cloud, - - - -	60·2 per cent.
Rainfall (on 20 days), - - - -	2·008 inches.
Greatest Daily Rainfall (on 7th), - - -	·370 inch.
General Directions of Wind, - - -	W., S.W.

Remarks.

Wet, stormy, and open during the first three weeks, the weather changed about the 20th, from which day to the close it was quiet, cold, and often foggy. The mean temperature deduced from daily observations at 9 a.m. and 9 p.m. was 41·2°; that calculated by Kaemtz's formula from the means of the daily maxima and minima was 40·8°, or 0·3° above the average of the twenty years, 1865–84, inclusive. The arithmetical mean of the maximal and minimal readings was 41·6°. On the 13th the maximum was 56·4°, on the 22nd the minimum was 27·3° in the screen and 23·4° on the grass. The mean height of the barometer was 29·815 inches, or ·067 inches below the average. Pressure was seen to range from 28·909 inches at midnight of the 19th to 30·400 inches at 9 p.m. of the 21st—a difference of nearly *one and a half inches* (1·491) being thus recorded within 45 hours. The rainfall was 2·008 inches on 20 days, compared with a twenty years' average of 2·516 inches on 17·0 days. In the 20 years, however, there were 9 Decembers with a smaller rainfall and 14 with a less number of rainy days. The bulk of the rainfall fell in the unsettled weather of the first three weeks—after the 20th only ·126 inch was measured on three days.

In the period ending Saturday, the 6th, the weather was chiefly unsettled, stormy and rainy, with sudden and rapid variations in atmospherical pressure and temperature. A succession of deep atmospherical depressions, passing across the British Isles from S.W. to N.E., caused frequent gales and rains. During the night of the 2nd temperature rose to 55·1° in Dublin.

In the second week (7th–13th), the type of weather was generally south-westerly—open, rainy, and stormy. The barometer was throughout high over the S. of France, very low off the N.W. coasts of the British Islands, along which several deep depressions passed in a north-easterly direction. There was scarcely any frost in Western Europe, but the cold held with great persistence in the Gulf of Bothnia and the extreme N. of Scandinavia. On the morning of the 7th a thunderstorm occurred at Belmullet, and very rough weather was felt in Ireland. *In the evening* of Saturday, the 13th, temperature rose in Dublin to 56·4°—the maximal reading of the month. The mean temperature of the week in this city was 46·8°, or 5·5° above the average.

The period ending with Saturday, the 20th, was the third consecutive week of storm and rain—the weather type being cyclonic and westerly. Numerous deep depressions kept passing along our extreme N.W. coasts towards N.E. or E.N.E., while a series of shallow subsidiary depressions crossed England in the same direction, thus extending the area over which broken weather prevailed. Until the 20th the barometer stood relatively high in France, where conditions were more than once distinctly anticyclonic for the time being. But the most remarkable feature

in connexion with the distribution of atmospherical pressure was the curious way in which the Atlantic depressions came to a standstill and began to fill up when they reached the coasts of Norway. They seemed to be held completely in check by a barrier of cold and therefore heavy air over Sweden, in the N. of which country frost again prevailed uninterruptedly. In Dublin there was a little snow on the 17th at 11 a.m., and heavy hail fell at 1 p.m. of the 18th. On the 15th and 18th lightning was seen in many places.

The week ending the 27th was one of quiet, cold weather, with light variable winds, or calms, and a tendency to fog. After Sunday, the 21st, conditions were almost invariably anticyclonic in Ireland, while depressions skirted the W. coast of Norway, bringing S.W. winds and open weather even as far N. as the Lofoden Isles. During the 19th and 20th a very deep depression had travelled quickly across Ireland and England, reaching Yarmouth at 8 a.m. of the latter day, with the barometer down to 28·62 inches at that station. In the rear of the depression the barometer rose with great rapidity, and strong N.W. and N. gales prevailed. At 4 p.m. of the 21st a fine "afterglow" was seen from Dublin, and frost set in at night. Next day was fine and frosty, and during the remainder of the week the weather varied between frost and cloud—the atmosphere often being very foggy, particularly in the city.

During the last few days of the month an anticyclone over the Baltic and Scandinavia caused S.E. and S. winds in the United Kingdom, and in Ireland the weather became dull, raw, and murky. In this country a considerable but transitory rise of temperature took place on the 31st.

In Dublin a lunar halo was seen on the 5th, a little snow fell on the 17th, hail occurred on the 18th and 30th, and there was more or less fog on the 21st, 22nd, 27th, and 28th. Strong winds were observed on 16 out of the first 20 days.

Rainfall in 1884,

At 40, *Fitzwilliam-square, West, Dublin.*

The Rainfall was smaller than in any one of the preceding nineteen years, 1865–83 inclusive, and was much below the average of the same nineteen years—viz., 28·412 inches. In 1870 only 20·859 inches fell, and that was really a drier year than 1884, for in it there were but 145 rainy days, or days upon which not less than ·01 inch of rain (one-hundredth of an inch) was measured. In 1884 there were as many as 187 rainy days, compared with an average number of 195 in the nineteen years, 1865–83 inclusive. Contrary to what usually occurs, more than half the rainfall fell within the first six months—11·872 inches having been registered up to June 30 on 92 days. In fact, the most striking feature in the distribution of the rainfall was the scanty downpour

observed in August (·777 inch) and October (·834 inch), usually two of the wettest months in the year, the averages being 2·987 inches and 3·140 inches respectively. On no one day did one inch of rain fall—the heaviest daily rainfalls were ·863 inch on April 4, and ·700 inch on February 20. It will be observed that on April 4 more rain fell than during the whole month of October, and that on February 20 the downpour nearly equalled the rainfall of August.

Month	Total Depth	Greatest Fall in 24 Hours		Number of Days on which ·01 or more fell
	Inches	Depth	Date	
January, - - -	2·358	·380	22nd	18
February, - - -	3·518	·700	20th	20
March, - - -	1·858	·467	9th	17
April, - - -	1·532	·863	4th	11
May, - - -	1·358	·263	14th	16
June, - - -	1·248	·551	3rd	10
July, - - -	2·350	·418	22nd	25
August, - - -	·777	·339	27th	8
September, - - -	1·214	·310	7th	14
October, - - -	·834	·170	8th	14
November, - - -	1·412	·553	1st	14
December, - - -	2·008	·370	7th	20
Total, - -	20·467	—	—	187

J. W. Moore, M.D. Univ. Dubl., F.R.Met.Soc.

PERISCOPE.

IODIDE OF POTASSIUM IN PNEUMONIA.

Thinking that pneumonia should be considered not as a local disease with general symptoms, but as a local manifestation of a general disease, Schwartz has proposed the administration of iodide of potassium in doses of gr. 6 every two hours, with the application of an ice-bag over the pneumonic focus. Iodide of potassium acts against the causal agent of the pneumonic process; and, when given at the commencement of the disease, arrests its effects, causing complete and quick recovery. All of the cases thus treated by Schwartz were cured, and in one-tenth of the cases recovery took place on the second day. Riebe obtained equally good results. Dr. Gualdi (*Boll. della R. Acad. Med. di Roma*) has employed this method of treatment in thirty-nine cases, and with excellent results. In all of the cases he noticed that in about two days the sputa

lost their pneumonic characteristics, changing from the viscid and tenacious to the serous and fluid state; the fever disappeared, and dyspnœa ceased, whilst the physical state of the lung had not changed, and in some cases was worse; and it was also noticed that the appetite of the convalescents was such that the amount of food had to be decreased. The mortality was six in 100, but two of the fatal cases could not strictly be included, as they became wildly delirious early in the disease, and only took gr. 30 of the iodide. It is noteworthy that, under this treatment, whilst the fever and dyspnœa disappear, the lung remains in the same state. This seems to justify the opinion of Jürgensen that the dyspnœa is dependent upon the fever, and not upon the changes in the state of the lung. Dr. Gualdi draws the following conclusions as to this method of treatment: (1) the method of Schwartz gives excellent results in pneumonia; (2) these results are better with children than with adults; (3) this treatment should be commenced at the beginning of the disease, as the result is then immediate and perfect; (4) the advantages are seen in the effects upon the fever and dyspnœa, not upon the local lesions; (5) the action of the ice is secondary in the sense that it bears on the effects and not on the cause of the disease. It is useful in the stage of congestion, but injurious at a later period, when the contents of the alveoli are coagulated and the lung indurated.—*Bull. Gén. de Thérap.*, August 15, 1884; *Practitioner*, Jan., 1885.

THREE CASES OF CROUPOUS BRONCHITIS IN CHILDREN.

Dr. Möller (*Hospitals-Tidende*, third series, Volume II., page 285) has seen three cases of bronchial croup in children. The first showed itself after an attack of typhoid fever in a lad, aged fourteen, the second after scarlet fever in a boy of eleven years; the third patient was a strumous girl of fourteen, in whom the formation of a cavity in the apex of the right lung had been diagnosticated. Towards the close of her life she habitually coughed up casts of the bronchial tubes. Only one of the three patients in question—namely, the boy, aged eleven, who had had scarlet fever, recovered; the other two died.—*Nordiskt med. Arkiv*, Part III., 1884. J. W. M.

LARYNGISMUS STRIDULUS.

Professor Widerhofer (*Allg. Wien. med. Zeitung*) recommends traction of the tongue, and sprinkling the face with cold water during an attack of laryngismus stridulus and in the intervals, bromide of potassium—4 grains night and morning, gradually increasing to 8 grains.—*St. Louis Med. and Surg. Journ.*

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PART I.

ORIGINAL COMMUNICATIONS.

ART. IX.—*The Causation and Treatment of Scarlatina.*[a] By W. WHITLA, M.D.; Physician to the Belfast Royal Hospital; Consulting Physician to the Ulster Hospital for Diseases of Women and Children.

MR. PRESIDENT,—When you did me the honour, a few days ago, of requesting me to open a discussion upon "the Causation and Treatment of Scarlatina," it was with great reluctance that I consented, mainly from a feeling that there were so many other members more competent to deal with this important subject than myself. This feeling has, I need not say, deepened considerably in the few days in which I have been attempting to formulate the following brief and necessarily fragmentary remarks; and I place them before you, gentlemen, not presuming to enlighten any member, but solely in a *suggestive* way, hoping that they may be the means of extracting the valuable experience of the many able observers enrolled in our Society.

The greatest difficulty which presents itself is the vastness of the field covered by the term "Scarlatina." Anyone who thinks differently has but to turn to the very condensed and abbreviated list of authors referred to in Ziemssen's chapter on Scarlatina, and he will find the list covers ten large pages of small print. [The Council at first decided to limit the remarks to the causation and

[a] Delivered before the Ulster Medical Society, February, 1885. [For the discussion on this paper see p. 252.]

treatment of the disease, excluding all reference to the symptoms, varieties, sequelæ, &c.]. Time will, however, permit me only to touch upon a few of the more important facts or theories falling under the heads of causation and treatment.

There are few diseases in which the ætiology has been so unmistakably demonstrated as in scarlatina. It is established beyond reasonable doubt that the disease is produced by some substance which passes from those affected with the malady to those susceptible to its development.

The long-enjoyed immunity of isolated regions until invested by the commerce which brings not only the blessings but also the evils of civilisation in its train, the absolute safety ensured by rigid isolation, the evidence afforded by inoculation, and the clinical experience of every one of us, prove incontestably that scarlatina is a disease always produced by contagion. A study of its ætiology, consequently, means an investigation into the nature of the substance conveyed from the affected to the healthy. As yet the laborious research of the histologist has not *definitely* settled this question. There is little doubt, however, that the poison is a living organism, which, after finding its way into the circulating fluid, increases, multiplies, and produces the characteristic phenomena of the disease.

Micrococci and bacteria have been frequently found in the blood and tissues of patients suffering from scarlatina; the blood-cells drawn from the vessels during life have been found in some instances to contain minute living beings, whilst the serum has yielded bacterial organisms. The observers who have watched the appearance, growth, and development of these bodies are still apparently doubting whether they are the cause or the result of the disease.

The blood or serum containing these minute, rapidly-moving, or oscillating specks, and the unmistakable rod-like formations formed by a coalescence of them, was experimented with by Reiss, who, after extracting it from a living or rather from a dying scarlatina patient, injected it into the skin of a rabbit, which died in a short time afterwards, its blood swarming with these organisms, which in their turn gave rise to similar results after further inoculations upon healthy rabbits.

Pohl-Pincus and Klein have described micrococci found in the throat secretion, the former observer having identified the same organism with one which he had previously found growing upon the desquamated epithelium. They are exceedingly minute, not

exceeding ·0004 mm., and averaging about ·0005 mm. They stain readily with strong methyl violet solution, and form only small colonies. Feltz and Coze have also found these in the blood.

More remarkable, however, are the results of Dr. Eklund's investigations, carried out in Stockholm, and which have been corroborated by Professor Octorlony, but which I have been unable to see noticed in any of our current British literature. He found in the urine of scarlatinous patients large quantities of spherical, nucleated, almost colourless small cells, exhibiting rapid movements, and dividing actively. These bodies, which were also found in the blood, occur, according to these observers, constantly, and they have received the name of Plax scindens. They do not take on the chain-like arrangement, nor do they congregate into clusters, as the ferments or zoogloœa do. These observers maintain that they constitute the specific miasm or poison which produces scarlatina, and Eklund makes the astounding statement that he has found them to be very common vegetable parasites, growing in the soil, in water, upon old walls, and upon mouldy wall papers, &c., and he quotes cases where the disease attacked the children of a family living in the vicinity of some excavations, in the earth of which he found the cells of Plax scindens. Even if the identity of these cells with those found in the urine in scarlatinous patients be established, it will not in any way prove that they are the *cause* of the disease, and we may safely permit these marvellous results to await that searching investigation which they will soon receive, and I expect that the vegetable Plax will be seen to have nothing to do with the cause of scarlatina; but if found to have ever been present it will likely be proved that its presence was a mere coincidence.

Though we cannot as yet demonstrate the living organism, or isolate it as thoroughly as has been done in typhoid fever, cholera, pneumonia, anthrax, &c., we know a great deal about its nature. It is the most *tenacious* of all contagions, clinging to articles of clothing, furniture, surgical instruments, food, drink, writing-paper, the feathers of birds, and the skins of animals, for very long periods. Cases are recorded where many months, and some where years, failed to deprive the virus of its fatal power. It will survive prolonged heat up to near the boiling point, and cold or freezing temperature does not destroy its vitality. These properties prove conclusively that it is not a liquid, gaseous, or volatile substance; and though its tenacity clothes it with very formidable

power, nevertheless its want of volatility prevents the quick diffusion through buildings and communities which may be seen in the more rapid spread of measles and typhus epidemics.

Soil, climate, and season have only a very limited and variable effect upon the virus. England can boast of heading the list of nations where scarlatina is a constant resident; she has the largest stock of virus, and manages to keep it in the most active stage of cultivation, notwithstanding her army of sanitary scientists. This may be owing to her soil or climate, hardly possibly to her dense population, since the disease is constantly much milder and less frequent in other densely-peopled climes. Autumn, with us, always increases the activity of the virus, and leads to a considerable increase in the number of cases. There are conditions which make the scarlatina virus somewhat of an exception to most contagious poisons, one epidemic being characterised by the mildest type of the disease, whilst the next visitation assumes all the malignancy of a plague. This character, which is seen to some extent in all the diseases which appear in the epidemic form, is certainly most marked in the case of scarlatina; and it is worthy of note that the same epidemic at one place may be mild, whilst not far distant it may be decimating in its character, even making allowance for individual susceptibility and all *known* local sanitary deficiencies.

By far the most interesting side of the ætiology of scarlatina is the way in which the poison enters the system. It was, I presume, this aspect of the question which suggested to the Council the advisability of selecting this disease for a discussion.

It is proved that the virus can be introduced into the system by inoculation, and, though experimenters differ in many minor results, there can be no doubt about this fact; nor can there be any doubt that the attack produced may be quite as severe or worse than that from which the virus was obtained. Blood, serum, pus, and, it is believed, many of the secretions, will act in this way. The poison cannot find its way through the unbroken cuticle, as Zuelzer has proved, but it may readily enter the system through a wound; hence the force of the term "surgical scarlatina." One instance is recorded where a lancet, used to open an abscess, produced the disease in this way, and the fingers of the accoucheur have directly planted the living organisms in the tissues of the puerperal patient. These are of course the *possible* ways, but it is probable that the route selected by the contagion

in the great majority of cases is the pulmonary tract and throat. The minute spores of the micrococci, appearing as mere specks under very high powers of the microscope, penetrate the walls of the finer vessels and the coats of cells, and are freely exhaled in the breath of the patient, whence they may obtain ready access to the mucous membrane of the air-tracts of others, taking effect upon the fauces first. We have in this latter the explanation of the preliminary sore throat so often experienced *before* the invasion, for the poison multiplies most rapidly at the seat of entrance into the system, as it does in experiments of skin inoculation. It appears also certain that the poison may find its way into the body through the gastric mucous membrane, as is proved by cases where the disease has rapidly followed the ingestion of food which had been allowed to remain in the sick room for some time.

A very rapid exposure is all that is necessary to permit the contagion to take effect; thus Palante reports a case where *one moment* was enough to infect a woman, who walked home six miles and communicated the disease to her children.

The poison, once having obtained admission to the system, circulates freely in the blood, as is proved by women having given birth to children suffering from the disease. Before, however, dwelling upon the *action* of the poison in the blood, we may with profit digress a little and consider the "ways and means" by which the poison may be conveyed or brought from the diseased to the healthy. Ordinary contact or close proximity of healthy subjects with scarlatinal patients affords the most frequent explanation of the spread of the disease. The evidence that a person may convey the disease from a patient suffering from scarlatina without being himself affected is overwhelming, and one would hardly meet a practitioner of experience who has not seen instances of this. Nurses have been found to spread the disease, and this often when the practitioner got the credit of it. It cannot be denied that the physician affords the simplest explanation of how scarlatina might be communicated, but I believe this *very rarely* occurs, chiefly because all physicians know the danger well, and the high sense of duty and conscientiousness, which is the motive power of the vast majority of the members of our sacred calling, leads to such precautions as render it well-nigh impossible for the disease to be so spread. Murchison believed that lying-in women had been infected in this way. This is not so improbable, as the duties of the accoucheur bring him into closer relations with his

patient than do those of the physician. I know there are conscientious physicians in large midwifery practice who do not hesitate to attend patients in scarlatina. I will not presume to say that this should not be permitted, but I would respectfully suggest that it would afford a very valuable result of this discussion if the gentlemen present would state their opinion upon this point.

Midwives have unquestionably carried infection, and, considering their more intimate relations with their patients, there can be no doubt that they should never be allowed to attend a patient, or come within the zone of contagion in any way.

Clothing which has remained in the sick room, though even not worn by the patient, is a very common source of infection; any article whatever may in this way communicate the disease. Letters sent through the post, a lock of hair, a box of toys, a piano which had stood in the sick room, two old rocking-chairs, books read by the patient, a bed pan, spoons, tumblers, and an enema apparatus, have all been proved to communicate the disease in recorded cases. Last year a serious outbreak was reported in a charity school, caused by a bunch of flowers being sent in from a scarlatina patient.

One common source of the spread of scarlatina will be found in the propagation of the disease by the members of certain occupations, as tailors, dressmakers, bakers, milkmen, butchers, laundresses, and undertakers, in many of which instances *small* epidemics may be spread in this way.

Scarlatina attacks the horse, cow, pig, goat, dogs and cats, and birds. Heim reports a case where a dog, lying in the bed with a scarlatina patient, contracted the disease, and suffered from all the symptoms, and Dr. Harkin will detail to you a similar case. Numerous instances of domestic animals carrying the contagion, without being themselves affected, are recorded, and I remember reading an account of mice, and of a canary, being the supposed carriers.

Many of the cases of the so-called spontaneous scarlatina could doubtless be cleared up if we kept in mind the possibility of the infection coming from the disease or intervention of domestic animals.

A very important question is the food supply. It is obvious how a desquamating baker, treading dough with his feet, or kneading it with his hands, or a tailor or dressmaker, recovering from the disease, might disseminate the contagion, but the more

important problem of whether the flesh or milk of diseased animals has the infective property, remains yet to be demonstrated. Innumerable cases are recorded of scarlatina being conveyed through the milk supply. Upon inquiry these have been found to be traceable to the disease being present in (1) the milkman who delivers the article, (2) the maid who milks the cow, (3) the most frequent cause, the milk being manipulated, mixed, strained, or allowed to stand in a dwelling where the disease existed. I cannot find a satisfactory case clearly proving that the disease in the cow was the source.

An outbreak is reported from England where American hams were the cause.

Water has been often blamed, but I have not been able to find the report of an epidemic where the water supply has been proved conclusively to be the source. Upon this point I will relate a significant occurrence within my own personal knowledge. The impression produced upon me I shall not soon be able to shake off. I visited two patients recovering from a smart attack of the disease, I believe about six or seven months ago (just about the beginning of the last sharp outbreak in Belfast). They were in the third week of the disease. I found they had gone out together some hours previously to spend the forenoon in the "Water-works," and I learned that they had amused themselves by picking off the slices of epithelium whilst sitting or walking in a gentle breeze along the margins of the reservoirs containing our water supply. I mention this fact to you, gentlemen, in the face of the fearful possibility of a cholera epidemic at an early date, and I leave you to meditate upon the wisdom of utilising our water-works for the band promenades and gala nights of the approaching warm season.

The propagation of scarlatina by improper sewerage arrangements claims a passing notice. Many there are who hold this view, and perhaps some of you will be surprised to hear me quote the following from our late lamented Mahomed, who recently fell a victim to a contagious disease. In April of the past year, speaking at a meeting of the Harveian Society, "he dwelt upon the fact that scarlatina was not always propagated by contact with infectious persons. He remarked upon its occasionally endemic character, and quoted cases in which it had repeatedly occurred in houses associated with other cases of septic poisoning and was clearly traceable to sanitary defects. He thought it not unfrequently a drain disease. Although he did not believe in its

spontaneous generation, yet he thought it very probable that a comparatively innocent germ or ferment could take a more malignant character. He said, in fact, he believed in the evolution of the disease."

After a careful study of the reports of several outbreaks in different places, I believe the evidence of scarlatina being a drain disease rests upon the flimsiest foundation. I speak, perhaps, in a manner not warranted by a limited experience, but I am tempted to do so, because at one time I accepted the belief myself. There can be no reason why the excreta of an affected patient, passing into a sewer, may not render the sewer capable of spreading the disease, as long as the excreta may remain in it. This is different from the view that sewage matter has the power of *evolving* scarlatina germs from comparatively innocent ones.

There is not even *evidence* that the general bad constitutional effects of deficient sewerage render a people more liable to be attacked with scarlatina, nor is it proven that scarlatina, once engendered by other means, is rendered more virulent by previous exposure of the patient to sewer gas. The disease has continued to deepen in extent and gravity in the face of all the modern reforms in sewerage management. Carpenter maintains that the contagion may be originated by the offensive odours arising from slaughter-house offal being used as land manure. He quotes instances, but the knowledge that the slaughtered animals may have suffered from the disease renders it possible that another explanation might be offered.

The pulmonary and cutaneous *exhalations* and excreta do not get that credit for being active agents in the causation of scarlatina which, to my mind, they deserve. The idea which appears often to fill the lay and even the professional mind, to the exclusion of everything else, is that the scales or epithelial cells shed in the desquamating stage are practically the *sole* sources of infection. Doubtless it was an advance to establish this belief, but it is a grave error, from which the science of preventive medicine suffers, to once allow the physician's mind to grasp the gross or material idea that he can see and almost handle the contagion of scarlatina. Many physicians who have got to regard this view as "the rule of thumb" sort of law to guide them in dealing with the disease, act as if there could be no contagion given out from a patient in the very early stages of the disease. I remember, with a shudder, an eminent physician going to a lying-in patient from a bad case of

scarlatina, after wiping his hands in a dry towel, saying—"There is no danger till the scales come." Believing that this is a very prevalent lay and professional notion, I may be permitted to refer to a few facts. Trousseau, as quoted by Thomas, relates a case where an Englishman travelled from Pau towards London with his daughter, who had resided some time at Pau, where there was no scarlatina prevailing. They arrived in Paris at the same time that another daughter did, who had taken scarlatina upon her way from London. Both girls lived in the same room for the first twenty-four hours, when the second one was attacked with scarlatina. Marson reports a case where a boy was speedily attacked after visiting another boy who had just taken sick; and numerous similar instances are recorded.

Dr. Browne will, however, detail to you a case showing that a very brief exposure to a case on the *first* day of the disease produced scarlatina (after a rapid incubation) in a surgical patient.

Thomas, the writer of the article in Ziemssen's Encyclopædia, remarks:—"If we simply follow the facts which are verified daily in regard to the incubation—namely, that single cases in a family into which scarlatina has been carried by one of its members as a rule manifest symptoms of the disease a few days after the affection of the first patient, we should incline to the assumption that scarlatina possesses the property of infection from its commencement." Of course all these cases are susceptible of the explanation that the second patient may have been infected by some of the old virus which might still possibly be clinging to the first patient, and from which he got his disease. That scarlatina might be infectious even in the incubating stage is rendered probable by Schaper's case, in which variola was demonstrated to be transferred from a patient in the incubating stage of smallpox. There can be little doubt that scarlatina is highly infectious in all the stages of its development from the moment the rash appears; almost equally little doubt that the infective power is at its *height* when the disease is in a similar stage.

Ziemssen says:—"The contagiousness of the post-exanthematic period is usually ascribed to the scales of epidermis which separate during the process of desquamation, but it seems to me there is not the shadow of evidence to prove that the contagion is contained in them either exclusively or chiefly. Volz, in fact, totally denies the contagiousness of the epidermal desquamation." Upon these strongly expressed views, even of two such renowned

observers, I believe one should be slow to act, though Squire, who has written the able article in Quain's Dictionary, says:—"In fact, desquamation is not the *only*, or even the *chief*, means of its diffusion. It is only the fine dust first rising from the surface, just after the rash is at its height, that is charged with the intensest essence of the infection." It is worth noticing, also, that the inoculation experiments have almost always failed when the scales were used. These are points of vital interest in a study of the causation and prevention of this formidable malady.

No more important issue can be raised than that involved in the question of how long an affected patient may have the power of infecting others. By a sort of common consent *six weeks* is the period considered safe, and, though the desquamating stage may not be fraught with the dangers generally supposed to surround it, it will be well to prolong this period to nine weeks if desquamation or convalescence be retarded. In speaking of the causation of scarlatina we cannot omit to mention two or three undoubted facts; time will only permit a reference to them:—

1. The poison from the mildest case may produce the most deadly form of the malady.

2. In no disease is the extraordinary part played by individual susceptibility so marked.

3. This susceptibility runs in families, and is often noticed in the most robust members of these families. If time permitted, I might mention cases recorded where families of twelve, ten, nine, and eight members have all sickened within a short time, and the majority, and in some instances all, succumbed to the disease.

Bearing upon an investigation into the ætiology of scarlatina, comes the question of the incubation. I had hoped to speak at some length upon this most interesting aspect of the question, but time will allow me only to refer to the conclusion which I have arrived at from a study of recorded cases, and from a limited experience—viz., that the incubative stage of scarlatina is really much shorter than has been formerly supposed, and, I think, shorter even than is generally realised.

Scores of cases, upon undoubted authority, prove that twenty-four hours only had elapsed from the receipt of the poison till the symptoms showed themselves; more numerous are the records which prove forty-eight and sixty-four hours, and we may take it as almost established that three or four days will give the rule as the incubative period. Squire says the longest clear interval from

a definite single exposure to sickening has been four and a half days, "and all accurate investigation of the cause of infection in scarlatina tends to reduce the estimate of the average incubation period to *less* than three days." Though we must accept this as the rule, it is pretty certain that the time may be prolonged to seven days, and this widely varying period of incubation is almost distinctive of scarlatina amongst the exanthemata. It is just possible that patients may carry the virus about with them in their dress for a time prior to their really being infected by it. Upon a correct and due appreciation of this short incubation period of scarlet fever much will depend for the success of measures for the isolation and prevention of the disease.

In concluding these imperfect remarks upon the causation of scarlatina I pass over the susceptibility of the "puerperal state" and the conditions of patients suffering from "open wounds," with the intention of hearing the views of the learned ex-President, who is devoted to the puerperal department, and with the hope of eliciting, Mr. President, from yourself and your surgical colleagues the results of your rich surgical experience, if it has touched upon the domain of surgical scarlatina.

I rather avoid the question—which I believe is rapidly becoming a thing of the past—whether puerperal fever, or septicæmia, or erysipelas can arise from the poison of scarlatina, or whether they have the power of becoming changed, in their turn, into scarlatina. The view "that like begets like" is the one which, to my mind, the whole weight of recent teaching tends to support.

As regards the important issues arising out of the question of the treatment of scarlatina, it appears to me to be much more desirable to trespass very little further upon your time and patience, but, after a few brief, suggestive remarks, ask for the results of that ripe experience which is represented by the list of names upon the circular to-night.

One difficulty about a consideration of the relative values of various lines of treatment in scarlatina—and it is a great difficulty—arises from the worthlessness of statistics regarding treatment. A disease depending so much upon individual susceptibility, and the extraordinary variations in the severity of epidemics, can hardly afford any conclusive proof of the value of any given lines of treatment, unless sifted in a way which is hardly practicable. Added to this is the next great difficulty that we can gain little from the experience of our German or French brethren, since

unquestionably with them the disease assumes, speaking generally, a milder type, especially in its endemic cases. These considerations render a discussion upon the point of treatment of really great value to a Society of local physicians, and afford another reason why I should content myself with introducing the matter.

The treatment of scarlatina at once divides itself, from the first moment a case comes under the care of the physician, into two distinct heads—(1) The treatment of the disease in the patient; and (2) the *preventive* treatment, directed to those surrounding him.

In the majority of cases I believe you will agree with me in saying that the latter is the most important. Ever mindful that the mildest case may disseminate, even in the early stages, a virus which gives rise in some to a rapidly fatal disease, the physician should always insist upon immediate and rigid isolation, disinfection of all articles, foods, excretions, and individuals leaving the sick room; thorough ventilation, and the removal of everything which can harbour fomites. Early anointing of the patient's body with oil or lard, to which some disinfectant is added, or the rigorous cleansing of his epidermis by sponging with tepid water, to which Condy's fluid has been added, are essential to prevent the spread of the disease, especially in the early desquamative stages.

Inoculation of the healthy to produce a milder disease is so opposed to every experience and knowledge of the treacherous inconstancy of the virus, that it should not be thought of. The value of belladonna as a prophylactic is, I believe, as mythical as the many charms belonging to the practice of the darker ages.

As regards the treatment of the disease in the patient himself, we may affirm that there is no evidence of the power of any remedy or line of treatment to really cut short the disease; at the same time, few better opportunities are afforded to the scientific physician for the exercise of his varied talents than are presented in the treatment of a severe case of scarlatina.

If a case should chance to present itself in the incubative stage with the *preliminary* sore throat, the physician will ask himself, "Can I cut short the disease by destroying the virus at its point of entrance into the system?" It will do no harm to try; I believe the result will be about as brilliant as that obtained in cauterising a chancre (the cases are exactly alike); and though some affirm they have cured the disease in this way, it always

appears to me that, as some of the poison *must* have got into the open lymphatic channels of the tonsils, it is like locking carefully the stable door after the steed has departed.

In dealing with the average mild cases of scarlatina, one would do well to remember the very significant dictum of a wise physician, that "scarlatina is dangerous only through the officiousness of the physician."

If any one should have a lingering belief in the efficacy of *blood-letting*, *mercurialisation*, *purgation*, *blistering*, or *emetics* in ordinary or even in malignant cases, a study of the graphic lectures of Stokes, in which he honestly recounts his failures, would do much to convince him that these remedies should never be again seriously thought of.

The line of treatment for simple cases which is now by almost universal consent adopted, is the *symptomatic;* doubtless, this must be the correct one. With our present knowledge we know that as yet we have *not* discovered a drug which will cut short the disease by destroying the poison germs in the blood, without killing the patient. I believe I am not saying too much when I state that the results of recent therapeutic research all point to the happy conclusion that the day is not very far off when the physician will be enabled to control the growth of the parasites, which cause the symptoms of these acute contagious diseases, with as much ease as he now controls the paroxysms of ague or destroys the parasitic skin disorders.

With some sort of idea that quinine, salicylates, sulpho-carbolates, sulphites, carbolic acid, and a host of other remedies, act in this way, they have been tried, but with varying grades of success. No one can deny that they often effect *great* good, and in some cases quinine and the sulpho-carbolate of soda have saved life—they certainly reduce temperature for a time, though there is no evidence that they cut short the disease. Francis lauds the inhalation of ozone, and Bennet reports that by the administration of a tablespoonful of fresh yeast, often repeated through the day, he has never lost a case of malignant scarlet fever. The individual experiences of the gentlemen round the table will prove of great service about the values of these remedies, especially as tried in various epidemics. I would suggest, also, that the whole question of the hydro-therapeutic treatment of scarlatina by the warm, tepid, and cold pack, be considered by those gentlemen who have had experience of it. My own experience of the wet pack in

scarlatina has been scanty and confined to a few cases, and the statements of various writers are most conflicting.

An aspect of the treatment about which, I hope, we shall have some information, is the one of treatment of the throat, and the sequelæ.

Is it the experience of our practitioners that kidney disease is less likely to follow after any particular line of treatment? Has proof been afforded to any one of what I have *suspected* for some time myself—viz., that the *early*, *frequent*, and *thorough* inunction of the body with oleaginous compounds renders the patient more liable to kidney affection? I have seen renal trouble excited by carbolic acid vapour too generously diffused in the interest of those attending upon the patient; and I believe that some gentlemen will bear me out in saying that the reckless dosage of throat-afflicted patients with chlorate of potassium has been seen to be productive of great mischief in scarlatina.

Considerations of vital interest hang round the question of treating uræmia in scarlet fever. It has been my fortune, in a somewhat limited experience, to see several cases of uræmic convulsions; all have yielded in quite an unexpected way to *prompt*, *energetic*, and *fearless* purging, accompanied by thoroughly carried out hot-blanket bathing—one drop of croton oil, with the rapid envelopment of the patient's body in a blanket wrung out of water which the attendant's hands cannot bear without considerable pain and discomfort. I think I can recall about a dozen cases, all successfully treated in this way. Mustard was in nearly all cases added to the bath, and the patient was enclosed till the perspiration was most copious—for at least half an hour, sometimes for two hours or more. Elaterium, so highly spoken of in emergencies like these, has so often failed me that I shall be slow to try it again. Recently I administered $2\frac{1}{2}$ grains of it in divided doses in a desperate case, inside six hours, at the end of which time the various doses were vomited without producing the least effect, and my patient was nearly lost through the inconstancy of this generally-respected drug. A similar experience more recently renders it incumbent upon me to mention this fact, and to modify a strong statement that I have made elsewhere which might induce the young practitioner to lean too much upon this drug in desperate emergencies. In the first-mentioned case the chemist, upon being abused for his supposed stale or adulterated article, swallowed $\frac{1}{3}$ grain, which, he affirmed, turned him inside out. I have only

chanced to see one death from uræmic convulsions in the later stages of the disease; it was the only case not treated by the blanket bath. It occurred a few years ago with a practitioner now deceased, and with whom I saw the case—who, having failed with a vegetable purge, administered 8 grains of calomel, from which rapid salivation and exhaustion proved fatal.

I refer specially to the treatment of this complication or sequel because I believe it to be the most important point in the study of scarlatinal therapeutics, and one upon the due appreciation of which the physician may have the feeling that his intervention has saved life; because, speaking *very generally indeed*, one might be tempted to say—A mild case of scarlatina requires *no* treatment; a really malignant case is beyond the reach of treatment. I should be very glad to hear the results of my senior brethren's treatment in malignant cases, before and after the rash comes out. Have they found pilocarpin of any value? Are stimulants so objectionable as are supposed? Have they seen any benefit from the cold douche, or large doses of quinine or aconite? Time does not permit even an attempt at an enumeration of the points, which I do not presume to touch, but which I hope to see handled by the different members following me, and I trust that the fact of my not mentioning any particular point in the domain of treatment will only act as an incentive to any gentleman who may have experience which he can relate about it.

Before concluding I wish to refer to some figures, even though I have so strongly condemned the value of statistics in the consideration of the treatment of scarlatina.

I think I may say that the treatment of scarlatina in the fever wards of the Belfast Royal Hospital, though independently carried out by four different physicians, is generally based upon the symptomatic or expectant plan. The patient is kept in bed in most cases for three or four weeks; gets fever diet No. 1, which practically means as much milk as he chooses to drink; generally, as a point of routine, he gets about 15 minims of dilute muriatic acid in 2 oz. water every four hours, and his throat is sometimes locally treated and sometimes not. His symptoms and sequelæ are treated, as far as I know, upon general principles—some give quinine, peroxide of hydrogen, iron, and salicylates; seldom is there much sponging, and, even when the temperature is very high, seldom is the pack employed; occasionally inunction is commenced early, generally it is used at some stage or other; the milk diet is

not changed till the fever has disappeared for a considerable time. As far as I know, no specific line of treatment is rigidly adhered to by my colleagues or myself. Stimulants, ice, purgatives, warm or tepid baths are employed frequently for cleansing purposes, and all complications arising are dealt with upon such rational grounds as one would expect in treating ordinary fevers or acute diseases.

It cannot be said we get the mildest cases of any disease into hospital. Occasionally malignant cases might die before the arrangements necessary for their removal were completed, and often mild cases come in because of the difficulty of isolation outside. The patients are not of the pauper class, since £2 2s. must be paid upon their admission. Allowing, as far as possible, for all extenuating circumstances, they must, upon the whole, be a class fairly representative of scarlatina, and if taken over a considerable period of time must contain a *large proportion* of severe cases. In looking carefully into the annals of the hospital for the ten years ending August 31, 1883, I was surprised to find that, male and female, 133 cases were admitted, and of these one death only occurred, and I believe that this case was moribund upon admission.

After a careful scrutiny of these figures I am strongly inclined to believe that they cannot be explained by the supposed mildness of the cases or the possibility of a mistaken diagnosis in even a small percentage, nor do I believe that any extraordinary superiority of the treatment of my learned colleagues or myself will account for them. I will, however, leave one fact with you—that the wards in which the great majority of these cases were treated were situated directly over the wash-house and drying-room of the hospital, in an atmosphere often of 60° during the winter, and surcharged with moisture, and occasionally impregnated with the fragrant odour of soap suds.

Mr. President and gentlemen, I conclude with a feeling of anything but satisfaction with myself. I am conscious that you must feel I have wearied your patience and done scant justice to the subject. My own incapacity, and the extreme shortness of the time at my disposal, should have decided my silence; but I was tempted in a weak moment a few days ago to yield to your request, urged solely by a strong sense of duty and loyalty to a Society in which I have received much instruction, spent many happy evenings, and formed, I hope, some lasting friendships.

ART. X.—*Self-Mutilation in a Lioness.*[a] By P. S. ABRAHAM, M.A., B.Sc., F.R.C.S.; Curator and Member of the Court of Examiners, R.C.S.I.; and Member of the Council of the Royal Zoological Society of Ireland.

ON the 18th of May, last year, a fine lioness in the Zoological Gardens, in Dublin, was discovered to have devoured, during the night, some six inches of her tail—the hair, skin, bones, and everything. She did not then touch it for some days, but appeared to be very restless, and on the 27th of the month she recommenced her extraordinary conduct, and demolished, during the night, the greater part of the remainder of the organ. She then rested awhile, but again went at it, and in four weeks from the time she began there was nothing left of her caudal appendage but the "butt"—some four inches or so—which I here exhibit. The organ was now so short that she could not reach it with her mouth, and it was hoped that in consequence she would resume her usual habit, and be satisfied with the flesh of other animals; but on the 1st of July she began to lick and gnaw off the skin of the dorsum of the right hind paw. The integument and subjacent tissue are seen to be removed from nearly the whole of the extensor surface of the foot, and it is evident that the tendons would be exposed were it not for the granulation tissue which has formed, as a superficial layer, over them. It was quite certain that while all this was going on the animal suffered extreme pain; the stump of the tail was to be seen in a constant state of quiver, and when the back of the foot was gone the leg was drawn up, and the creature limped about the cage on her three legs.

There was nothing apparently to account for this strange behaviour on the part of the lioness. She was in splendid condition as regards the fur, flesh, and appetite, and the excretions were normal. It is needless to say various methods were tried to induce her to leave herself alone—complete change of food, sulphur and other aperients, worm-powders, syringing the parts with bitter liquids, &c.—but all with no effect. At last, indeed, it was deemed advisable to destroy her, for her suffering seemed so great, and the extent of the wound on the foot was so large, that, even if she left off eating it, it appeared impossible that it could ever properly heal and skin over.

At an examination of the body, made shortly after death, I

[a] Read before the Pathological Section of the Academy of Medicine in Ireland.

found the thoracic and abdominal organs all perfectly normal; the right ovary was larger than the left, and its surface presented several large protrudent Graafian follicles. I was at first inclined to think that this ovary showed considerable abnormality, but after consultation with Dr. Neville, and on its microscopical examination, I think it probable that, beyond some degeneration, it is the seat of no very great pathological change. The brain and spinal cord were not examined.

The lioness, who was about twelve years old, had been in the gardens for five years, and had always been in good health. She had produced cubs three times, but her offspring were, with few exceptions, unhealthy, mostly becoming rickety and dying young. For one year previous to May, 1884, she had not been in season, although formerly she had been tolerably regular in "coming round."

It is well known that foxes and many other animals when trapped by one foot will sometimes gnaw themselves free, and leave a portion of their persons behind; and a gradual gnawing and picking away of the tail has been observed as a not uncommon habit with monkeys in confinement, as well as occasionally in dogs, rats, and some other creatures. The present case, however, does not come under precisely the same category as these, for there appeared to be absolutely no external cause for the procedure, and instead of a gradual gnawing away and disappearance of the organ, large pieces were scrunched off at intervals and swallowed.

I have made a great many inquiries as to similar occurrences in other zoological gardens and menageries, and I here take the opportunity of thanking several superintendents and others, some of whose names are mentioned below, for the information they have been kind enough to give me. The majority of my correspondents do not seem to appreciate the distinction pointed out above, for they class all the cases of self-mutilation together, as more or less due to a common cause.

As far as I can find out, the only instances of animals feeding on themselves, which had previously occurred in our own gardens, were in the cases of (1) a female hyæna, who devoured her tail some years ago; (2) a female wolf, who fed upon one of her own legs, and had to be destroyed; and (3) a female jaguar, who ate a good half of her tail, which had been injured by the claw of her neighbour, a tiger, over whose cage she was kept. The piece was hanging by a little skin and tendon, and when she had eaten it she

did not further interfere with the stump. This last case, therefore, is not exactly comparable with the others.

A keeper at the Zoological Gardens in London has informed me that some three or four years ago a young female cheetah, scarcely full grown, commenced suddenly to eat her tail. She would bite off two or three inches, then stop for a few days, then become excited and set to work again. This went on for several weeks, her excitement during the time being very great, and she frequently gave vent to loud screams. Finding no improvement, she was destroyed. An old female hyæna, who had never bred, also, some years ago, at the London Gardens, demolished the tail. She would wait till the stump was nearly healed, and then make another meal off it, until ultimately the whole organ disappeared.

Mr. Jackson informs me that the only case of mutilation which has occurred at the Clifton Gardens was that of a lioness, a piece of whose tail had been bitten off by a neighbouring tiger. She kept the wound open and sore for two or three months, after which it healed over, and she subsequently became a good mother. This, also, is hardly a case in point. M. Hüet, of the Jardin des Plantes, writes that such occurrences have sometimes happened among the leopards, lions, and smaller carnivora of that collection, and that they are especially common in the monkey department. He considers the habit due to a disease of the skin, which can be sometimes cured by treatment.

The late Dr. Bodinus, Director of the Berlin Zoological Gardens, had often observed animals of prey gnawing their tails and nibbling themselves; and he held that the bad habit has its origin in a faulty state of the blood. He recommended, therefore, a change of diet, such as from horse flesh to young veal, and castor-oil in milk, also local applications, carbolic solution, tincture of aloes, &c. He stated, however, that it is very difficult to prevent wild animals from gnawing themselves when suffering from pain. He had, nevertheless, been quite successful lately with a young female jaguar who was eating her tail.

M. Herman, Director of the Amsterdam Collection, has met with only one instance of anything of the kind, in an experience extending over forty-six years. This was in the case of a rhesus monkey, "which, becoming mad, began to eat its forehands."

At the Antwerp Gardens no carnivore has ever attacked its tail, unless that organ had been wounded. Occasionally, however, an animal has shown some tendency to constantly lick the tail, but

a good dose of sulphur has removed the irritation. On the other hand, the monkeys have frequently eaten their tails, and nothing but amputation of the organ has stopped them.

Mr. Jamrach has several times met with such cases among leopards and lions, and, of course, often with the monkeys. He ascribes the cause to be either a healing wound or an irritation of the skin, the intolerable itching developing into a mania. He states also that parrots frequently eat their feathers and flesh.

Mr. Salva, of Cross' menagerie, has frequently observed carnivorous animals mutilating themselves, especially among those which are suffering from scrofulous sores. He considers the only successful treatment to be by amputation of the injured limb.

Through the kindness of Mr. Snow, of the Phœnix Park Gardens, I have received an account of a very good case in point, that of a young imported Bengal tigress, sold by Mr. Carpenter, of Liverpool, who writes as follows:—"I had a letter last November [from the present owner] saying the tigress was very fine, but had a habit of dropping its tongue out and rolling it about a good deal; and a few days later I received a letter saying that it had eaten the whole of its tail off." This animal had never bred.

Lastly, Mr. F. Collins informs me that many years ago he knew of a lioness in Wombell's menagerie who devoured her tail.

It will be observed that several of my informants put down the morbid appetite to some irritation of the skin; and, no doubt, this may sometimes account for the gradual disappearance of a tail. A sore may be originally formed at the tip, and when the itching of healing begins the scab is picked, licked, or gnawed off; the newly rawed surface again heals over, again to be denuded, and this may go on until the organ at last is all gone. Of course, a continuous licking with the prickly feline tongue will soon produce a sore; but it seems unlikely that this or any of the other suggested causes will account for an animal suddenly munching off large portions of its person. On the whole, I am inclined to consider that this departure from the creature's usual habit is due rather to something akin to mental derangement; and I think that M. Herman is probably right in saying that his rhesus had "gone mad." My inquiries tend to show that the carnivores which have "taken on" in this way have been nearly always females, which have either been very young, just before they began to breed, or old, at the menopause, when their breeding period had come to an end—at any rate, that there has always been some interruption or disturbance of the

sexual function; and I venture to suggest that we may look upon this perversion of taste, in our lioness at all events, as one of the manifestations in the lower animals of that protean affection which we call "hysteria."

ART. XI.—*Sanitary Organisation in Ireland in its Medical Aspect.*[a] By JOHN WILLIAM MOORE, M.D., M.Ch., Univ. Dubl.; F.K.Q.C.P.; Physician to the Meath Hospital and to Cork-street Fever Hospital, Dublin; Chairman of the Sub-Section of State Medicine in the Academy of Medicine in Ireland; Ex-Scholar and Diplomate in State Medicine of Trinity College, Dublin.

GENTLEMEN,—You have done me the honour of selecting me to fill the Chair of the important Sub-Section of State Medicine in the Academy of Medicine in Ireland during the Session of 1884–85. For this signal mark of your esteem and confidence I heartily thank you. Yet I approach the performance of the duties attaching to this Chair with no little diffidence, more particularly when I recall who were my predecessors, and how admirably they discharged those duties in the past two sessions.

It would, indeed, be difficult to find abler or more earnest sanitarians than Dr. Grimshaw, the Registrar-General for Ireland, and Dr. Charles A. Cameron, the Superintendent Medical Officer of Health for Dublin; and I can only hope to follow in their footsteps, *haud passibus æquis*, relying on your goodwill and friendly criticism throughout the session we now inaugurate.

As you are all aware, the Sub-Section of State Medicine is under the direction of the Medical Section of the Academy, which is presided over year after year by the President for the time being of the King and Queen's College of Physicians. Not many weeks have elapsed since we listened with interest, and, we may surely add, with advantage to the excellent address which Dr. Cruise, in his capacity as President at once of the College and of the Section, delivered at the opening of the session. In that address Dr. Cruise introduced a masterly exposition of the relations of the medical profession to the Court of Chancery with these words:—"The points at which our profession touches its various surroundings are innumerable and diverse—in some

[a] An Inaugural Address delivered before the Sub-Section of State Medicine in the Academy of Medicine in Ireland, on Thursday, February 5, 1885.

instances most satisfactory, in others very much the opposite. It cannot, therefore, be otherwise than interesting and profitable for us to review and discuss some of these contacts."

The President's Address produced a lively impression, and I am encouraged by his example to bring under notice one more grievance to which our professional brethren in this country are subjected—to discuss briefly the relations of the medical profession to the sanitary organisation of Ireland.

Preventive Medicine—the latest and chiefest outcome of medical thought and progress—that which includes and expresses "the relations of modern medicine to humanity," as Sir Henry Acland has so well phrased it—is the great subject with which this Sub-Section has especially to do; and, remembering this, perhaps the topic chosen for this discourse may not appear altogether foreign to the objects we have in view. In a "Prelection" delivered before the University of Dublin in 1872, the late Dr. Stokes—one of the earliest, ablest, and most disinterested advocates of the doctrines of State Medicine that ever lived—observed: "Preventive Medicine embraces everything, as is well shown by the Regius Professor of Medicine at Oxford,[a] which relates to the physical and moral well-being of our fellow-men, so that it has to contend with all moral, social, and physical evils. Ignorance, selfishness, the grinding of the poor, the consumption of human life, like fuel, for the production of wealth, vicious indulgence, and everything that deteriorates the body, and with it the mind, come within its extended scope. Its object is the health, and therefore the happiness and prosperity of man—its instruments are science and common sense, with rules plain and patent to all, so that it promises to be the noblest pursuit yet offered to the human intellect, and he would be a bold man who would dare to limit its results or to predicate its triumphs."

These are weighty words from the pens and lips of men like Stokes and Acland—men endowed with that calm and philosophic spirit which soars far above the turmoil and bustle of daily professional life, and penetrating with eagle-glance the distant future, forecasts the wondrous advances which medicine is destined to achieve, not merely in the healing, but in the prevention, of disease.

On the 8th of August, 1878, an event took place which promised to mark a new era in the sanitary history of Ireland. On that day the "Public Health (Ireland) Act (41 & 42 Vic., cap. 52)"

[a] Sir Henry Acland, K.C.B., President of the General Medical Council.

received the Royal Assent, and for the first time a complete sanitary code was enacted for the benefit of this portion of the United Kingdom. The objects of the Act were officially stated to be two—namely, to consolidate into one Act the various provisions, with respect to sanitary matters and burial grounds, of the several Acts—no less than twenty in number—previously in force in Ireland, and to amend the same where such amendment was required. Six years and a half have elapsed since the Public Health (Ireland) Act became law, so that ample time has been given to form a mature judgment as to the merits or demerits of the measure and the success or failure of its practical application. The verdict can hardly be otherwise than that, while the Statute Book contains a splendid Sanitary Code, with exhaustive provisions and ample powers, the Public Health Act of 1878 has, so far, failed to exert that beneficial effect on the welfare of the country which was to be expected from the *bonâ fide* enforcement of its provisions and a judicious exercise of its powers.

The annexed Table, compiled from the Annual Reports of the Registrar-General, shows that increased attention to sanitary matters is beginning to tell upon the death-toll exacted by many of the principal zymotic diseases which are commonly and rightly supposed to be amenable to preventive measures. But a close analysis of the number of deaths caused by the individual diseases of this class suggests the disquieting surmise that the improvement is more apparent than real, and depends chiefly on the cyclic tendency of all epidemics. Thus, the deaths from scarlet fever, which fell to 1,079 in 1878, were 1,719 in 1883, and 1,342 in 1884. Typhus again became decidedly more fatal in the latter six years of the twelve under discussion—the yearly average number of deaths from this disease in 1873–78 was 705, but in 1879–84 it was 835.

The Table shows for each of the years 1873–84 the estimated population and the deaths from all causes, and from each of the principal zymotic diseases (smallpox, measles, scarlet fever, typhus, whooping-cough, diphtheria, simple continued and ill-defined fever, enteric fever, diarrhœa, and cholera) registered in Ireland during the years 1873–84, with the average annual number in the twelve years 1873–84; the annual mortality per 1,000 of the estimated population from all causes, and from the above-named diseases; and the ratio which the deaths from those diseases bear to the total deaths registered in each year.

Table.

Years	Estimated Population in the middle of each Year	Total Deaths Registered	Deaths from Principal Zymotic Diseases										Annual Registered Mortality per 1,000 Persons living		Percentage of Total Deaths caused by Principal Zymotic Diseases
			Smallpox	Measles	Scarlet Fever	Typhus	Whooping-cough	Diphtheria	Simple Continued and ill-defined Fever	Enteric Fever	Diarrhœa	Cholera	Total	From all Causes	From Principal Zymotic Diseases	
1873, - -	5,327,938	97,537	504	1,303	2,093	691	1,986	326	1,499	1,048	2,095	91	11,636	18·32	2·19	11·9
1874, - -	5,298,979	91,961	569	667	4,034	756	2,029	565	1,483	910	1,671	103	12,787	17·37	2·42	13·9
1875, - -	5,278,629	98,114	535	898	3,845	694	1,376	443	1,327	833	1,824	80	11,855	18·61	2·24	12·1
1876, - -	5,277,544	92,324	24	664	2,112	619	1,548	368	1,183	961	1,828	70	9,377	17·52	1·78	10·2
1877, - -	5,286,380	93,543	71	1,562	1,117	724	1,689	288	1,087	974	1,604	46	9,162	17·72	1·74	9·8
1878, - -	5,282,246	99,629	873	2,212	1,079	749	2,183	296	1,231	965	1,949	56	11,593	18·89	2·20	11·6
Yearly Average, 1873–78,	**5,291,953**	**95,518**	**429**	**1,218**	**2,380**	**705**	**1,802**	**381**	**1,302**	**948**	**1,829**	**74**	**11,068**	**18·07**	**2·09**	**11·6**
1879, - -	5,265,625	105,089	672	860	1,688	753	1,938	320	1,072	1,037	1,526	29	9,895	20·00	1·88	9·4
1880, - -	5,202,648	102,906	389	1,025	2,443	934	2,371	314	1,079	1,087	2,395	67	12,104	19·83	2·33	11·8
1881, - -	5,144,983	90,035	72	402	1,344	859	1,358	323	774	813	1,526	39	7,510	17·50	1·46	8·3
1882, - -	5,097,853	88,500	129	1,518	1,230	744	832	385	657	844	1,564	41	7,944	17·36	1·56	9·0
1883, - -	5,015,282	96,388	22	713	1,719	964	1,879	237	378	757	1,509	29	8,207	19·22	1·64	8·5
1884, - -	4,962,570	87,554	1	485	1,342	758	1,650	346	381	656	1,588	24	7,231	17·60	1·45	8·3
Yearly Average, 1879–84,	**5,114,830**	**95,079**	**214**	**834**	**1,628**	**835**	**1,671**	**321**	**724**	**866**	**1,685**	**38**	**8,816**	**18·59**	**1·72**	**9·2**
Yearly Average, 1873–84,	**5,203,391**	**95,298**	**322**	**1,026**	**2,004**	**770**	**1,737**	**351**	**1,013**	**907**	**1,757**	**56**	**9,942**	**18·33**	**1·91**	**10·8**

If we look at the general death-rate, we find that it was *higher* in the last six years than it had previously been—18·59 per 1,000 of the population annually compared with 18·07. It is, no doubt, true that the Burial Returns furnished since 1879 have rendered registration statistics more complete than before; but the fragile constitution of the people is sufficiently indicated by the hurtful effect upon it of a cold, wet year like 1879, when the death-rate rose to 20·00 per 1,000 per annum, in contrast to the low rate of 17·60 in the exceptionally fine and dry year, 1884. These figures appear small, but they represent a difference of 13,299 deaths, in favour of 1884 compared with 1879, amongst the average population of Ireland for the six years, 1879–84. A vigorous population can resist a severe season, but a weakly or aged population succumbs when exposed to inclement weather. As A. Quetelet says:—"At no age is the influence of season on the mortality more marked than in advanced life, and at no age is it less marked than between 20 and 25 years, when the physical man, perfectly developed, is in the enjoyment of his full vigour."

Let me call your attention briefly to the progress of Sanitary Legislation in Ireland. I will use the very words with which Dr. Jacob addressed Sir Michael Hicks-Beach, then Chief Secretary to the Lord Lieutenant, on the occasion of a deputation to him from the Irish Medical Association, on May 17, 1877, when the Public Health Bill was before Parliament. Dr. Jacob said:—"Previously to the year 1866 a variety of Acts of Parliament existed for Nuisances Removal and other matters connected with sanitary administration, but these were entrusted to a variety of different authorities, whose duty it was to enforce them—there was, in fact, a divided responsibility in the matter. By the Act of 1866 these powers were, for the first time, concentrated under a sanitary authority, but the powers were entirely permissive—the sanitary authorities were given opportunities of sanitation, but there was no obligation to exercise their powers. After the lapse of a considerable time, during which not much was done by these sanitary authorities, the Legislature again interfered. That very little was done I may say with certainty, for, from statistics collected by the late Dr. Maunsell on the subject, it appears that immediately previous to the passing of the Local Government Board Act such sums as £1 and 30s. a year were usual amounts devoted by sanitary authorities for the sanitation of their districts. By the Local Government Board Act (35 & 36 Vic., cap. 69, 1872) the super-

vision over these authorities was vested in the Local Government Board for Ireland. Then, by the Public Health Act of 1874 the previously permissive powers, which had been entrusted to these sanitary authorities, were made compulsory."

Between 1874 and 1878 the conviction gained ground that the sanitary system established in Ireland by the Act of 1874 was eminently unsatisfactory. Petitions to Parliament, expressive of this conviction, were presented by the King and Queen's College of Physicians and by the Royal College of Surgeons in Ireland, and as many as 624 out of a total of 803 "sanitary officers" (as they were called in the Act in question) petitioned the House of Commons either to be placed in a different position or to be relieved of their duties. Further, in the quarterly returns published by the Registrar-General there was at the time a chorus of disapproval, on the part of the Registrars, of the working of the Sanitary Act.

About this time (1877) the Report of the Royal Commission on Local Government and Taxation of Towns in Ireland was laid before the House of Commons. In this Report are contained the following significant paragraphs:—

"The evidence taken by us in the several towns included in this Report will show that, while in many of them much has been done, far more still remains to be done, and it is impossible to contend that in any one of them have the powers of the sanitary authority been so exercised as to leave little room for further improvement."

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"In some instances—and we would here especially notice Ennis, Bray, and Queenstown—revelations, indeed, of a very startling and shocking nature were brought before us, indicating an almost culpable degree of apathy on the part alike of the sanitary authority and the inhabitants."

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"Whether it is desirable to maintain the present system, by which the dispensary medical officer is sanitary officer for the district of which he is in charge as medical officer, is, we think, deserving of consideration. The addition, if any, to his salary is usually very trifling; the work, if properly carried out, is of a very onerous and invidious character; the direct communication between him and the sanitary authority is absolutely *nil*, and between him and the executive sanitary officer usually of a most casual

character; and thus misunderstandings continually arise which might, and probably would, be readily removed by more direct personal intercourse between the sanitary officer and his employers."

In the last paragraph I have quoted, the principal causes of the break-down of the Sanitary Organisation in Ireland are stated pithily and with the stamp of authority. But what is that Organisation?

For the purposes of the Public Health Act of 1878, Ireland is
Sec. 3 divided into sanitary districts—urban and rural—each of which is subject to the jurisdiction of a sanitary authority.
Sec. 4. Urban sanitary authorities are the Town Councils of corporate towns, the Commissioners, Municipal Commissioners, Town Commissioners, or Township Commissioners of other speci-
Sec. 5. fied towns or townships. Every urban authority may appoint out of their own number a committee, or committees, to transact the business of the authority, with certain exceptions.
Sec. 6. The area of every Poor-Law Union, with the exception of those portions (if any) of the area which are included in urban sanitary districts, forms a rural sanitary district, and the Guardians of the Union are the rural sanitary authority, subject to certain specified conditions. Section 7 of the Act empowers the Local Government Board, by provisional order, to alter sanitary districts on petition from the towns, townships, or districts affected by such order, but—in the event of any objection being taken by any person so affected—not until after due local inquiry. Sections 12 and 13 authorise the formation of a united sanitary district, governed by a joint Board, for (1) the procuring a common supply of water; or (2) the making a main sewer or carrying into effect a system of sewerage for the united district; or (3) any other purposes of the Act.

The eleventh section is so pertinent to our present purpose that I quote it *verbatim*:—

Sanitary officers and superintendent officers of health.

"Every medical officer of a dispensary district shall be a sanitary officer for such district, or for such part thereof as he shall personally be in charge of, under the title of medical officer of health, with such additional salary as the sanitary authority thereof may determine, with the approval of the Local Government Board; and every sanitary authority, whether urban or rural, shall appoint such other sanitary officers, including a medical superintendent officer of health when deemed necessary, as the Local Government Board shall in each case direct, with such salaries or

additional salaries as the said sanitary authority shall determine, with the approval of the Local Government Board; and the said Board shall assign to the medical officers of health, and to the other sanitary officers, if any, and to the medical superintendent officer of health, if such an officer be appointed for the sanitary district, their respective duties and functions in the discovery or inspection or removal of nuisances, in the supply of pure water, in the making or repairing of sewers and drains, or in generally aiding the administration of the sanitary laws within the district.

"Provided that with regard to salaries or additional salaries whereof any portion is to be recouped to any local fund from moneys voted by Parliament, the amount of any new salary and the proportion between any existing salary, and the addition thereto, shall be approved by the Commissioners of Her Majesty's Treasury.

"Every such salary or additional salary so determined or approved shall be payable from such local fund as the Local Government Board shall indicate as properly chargeable therewith, and such part thereof as Parliament shall from time to time determine shall be recouped to such local fund out of the moneys to be voted by Parliament; and the Local Government Board shall have the same powers with regard to the qualification, appointment, duties, regulation of salary, and tenure of office of every sanitary officer as they have in the case of the medical officer of a dispensary district."

It is to be observed that this section confers the title of "Medical Officer of Health" in lieu of the objectionable title, "Sanitary Officer," which was applied to the dispensary medical officers by the corresponding section of the Public Health (Ireland) Act of 1874. Further, in sections 87 and 59 respectively, the meaningless terms, "Executive Sanitary Officer" and "Sanitary Sub-Officer," introduced in the Act of 1874, are represented by the intelligible designations, "Clerk of the Sanitary Authority" and "Inspector of Nuisances."

Such is the existing sanitary organisation in Ireland. So far as its medical aspect is concerned, it has signally failed, mainly from two causes—first, want of independent supervision; and, secondly, inadequate remuneration. The Act of 1878 by section 11 gives only a *permissive* power to the Local Government Board to provide independent supervision, and naturally this power in consequence has not been exercised. Again, the remuneration allowed to medical officers of health by the various sanitary authorities under the sanction of the Local Government Board is—except in a very few instances—so shamefully inadequate that the only possible

result is practically to render the Act a dead letter, so far as medical inspection or advice is concerned.

Let us look a little more closely into these two points—supervision and remuneration.

Anyone who will consider the relations existing between the district medical officers of health and the district sanitary authorities, will scarcely deny the expediency—nay, the necessity of providing independent supervision. A notable instance occurred recently. When the Sanitary Institute of Great Britain was holding its annual Congress in Dublin last autumn, Dr. J. Byrne Power, the able Medical Superintendent Officer of Health for the Kingstown Township, read a paper before one of the Sections on the insanitary state of the township. In that paper he spoke in plain and unsparing terms of the decadence, poverty, and insanitary condition of the once flourishing township of Kingstown. For this Dr. Power was summoned before the authority, and ordered to apologise under a threat of dismissal from his appointment. Happily, he stood firm, and the threat was not carried into effect. But the incident conclusively demonstrates the necessity which exists for independent supervision if medical officers of health are to be held privileged in the discharge of their functions.

When the Act of 1878 was before the House of Lords, Viscount Powerscourt, at the request of the Council of the Irish Medical Association, placed the following amendment on the Notice Paper of the House, viz. :—

"The Local Government Board shall, from time to time, appoint so many fit persons as the Lords Commissioners of Her Majesty's Treasury shall sanction, being practising physicians or surgeons, to be Inspecting Medical Officers of Health, to assist in carrying out the provisions of this Act, and may remove all or any of such officers and appoint others in their stead.

"There shall be paid to such Inspecting Medical Officers of Health such salaries as shall, from time to time, be appointed by the Lords Commissioners of Her Majesty's Treasury, out of any money which may, from time to time, be provided by Parliament for that purpose.

"Within six calender months after the passing of this Act, the Local Government Board shall divide the whole of Ireland into districts, for the purposes of sanitary inspection, and every such district shall be subject to the supervision of an Inspecting Medical Officer of Health."

As the Government represented that the insertion of this clause would probably provoke such opposition in the Commons as would imperil the passage of the Bill, Lord Powerscourt withdrew his amendment. Strong representations, however, continued to be made on the subject of independent supervision, and these were invariably met with an official reply to the effect that the Local Government Board had the power already to establish such a system, if they thought it necessary to exercise it; or, in other words, that independent supervision was a matter for administration, and not one requiring legislation. Be this as it may, at present no such thing as independent supervision exists in Ireland, except perhaps in Dublin and Belfast. On the contrary, the sanitary authorities have been satisfied with appointing a nondescript class of officials called "Consulting Sanitary Officers." These gentlemen are generally the Workhouse Medical Officers, directly dependent on the Boards of Guardians, who appoint and pay them. "*Pay* them!" Hear the Report of the Local Government Commission on this point:—

"*In name* there is generally a Consulting Sanitary Officer, *at a ludicrously small salary*, but *he is rarely consulted*, and, except at Belfast, it is a perfect misnomer."

Addressing Sir Michael Hicks-Beach on the occasion already referred to, Dr. Jacob showed what is the result of this want of inspection and supervision. He said:—"The *onus* of detecting and reporting all nuisances lies upon the dispensary medical officer, who by virtue of his position is the sanitary officer. He is the person who is assumed to move, and whose duty under the Act of Parliament it is to move in the first instance in these matters. Now, who is the sanitary officer? He is a man who is directly connected with the sanitary authority; he is dependent on the sanitary authority; he receives his salary from them, and his personal income is dependent on them. And whom is he to report? The tenants and sub-tenants of the sanitary authority. Sometimes he is supposed to report the sanitary authority themselves, who are the persons entrusted with the carrying out of the sanitary laws; and therefore I submit that in leaving the dispensary medical officer as the sanitary officer without inspectorial control, you are putting him in a position the duties of which it is impossible he can effectually discharge. Therefore the first point we earnestly desire to urge on the Government is the absolute necessity of providing some control independent of the Board of Guardians and

the sanitary officer. The dispensary medical officers are most anxious to do their work in the majority of cases, but they have no power, and we ask the Government to provide them with a shield, so that they may be able to say—'You cannot complain of us for doing our duty in reporting such and such nuisances, for the inspector will come down and report us for not doing our duty if we neglect it.' Therefore, sir, we would most earnestly urge on the Government this question of inspection as perhaps the most important we have to bring before you. The result of the absence of inspection is, that in a great many districts in Ireland sanitation is absolutely unheard of."

Another burning question is that of the remuneration to be awarded to the medical sanitary staff of the country. In discussing this topic, it will be necessary first to inquire what duties are expected to be performed by medical officers of health. They are specified in an Order to Sanitary Authorities issued by the Local Government Board, under the Public Health Act of 1878, as follows:—

"Every medical officer of health who shall have been apprised officially by the sanitary sub-officer, or shall otherwise become cognisant of any matter demanding his attention, shall, as soon as practicable, visit the place, and if, after due inspection, he finds such matter to involve danger to public health, he shall report thereon to the sanitary authority, in the form (B) in the said Schedule B, showing the source from which he received the information, and the date thereof, and the date of his visit of inspection; he shall also give a sufficient description of the nature of the case, and the remedy which he recommends to be adopted, and shall preserve a duplicate of every such report.

"Every medical officer of health shall inform himself, as far as practicable, respecting all influences affecting or threatening to affect injuriously the public health within the district in his charge, and shall from time to time, as occasion may require, report on the subject to the sanitary authority, and recommend the measures which, in his opinion, should be adopted for the protection or improvement of the public health in such district.

"Every consulting sanitary officer, if such an officer be appointed for the sanitary district, shall attend meetings of the sanitary authority, whenever required to do so, and shall advise them on all matters and proceedings requiring medical knowledge and advice in the administration of the sanitary laws.

"Every medical superintendent officer of health, if such an officer be appointed for the sanitary district, shall discharge all the duties

imposed by this Order on the consulting sanitary officer, and in addition to such duties shall perform the following duties—that is to say, he shall report monthly to the sanitary authority on the general sanitary condition of the rural sanitary district, and on the discharge of their duties by the medical officers of health and sanitary sub-officers of the district.

"Every medical officer of health and sanitary sub-officer of the Union shall attend meetings of the sanitary authority, whenever required to do so, and shall assist in all proceedings in which his assistance may be required.

"Every medical officer of health, and every other officer appointed under this Order shall, in matters not specifically provided for in this Order, observe and execute the instructions of the Local Government Board and all the lawful orders and directions of the sanitary authority applicable to his office.

"It shall be the duty of the medical officers of health and of the consulting sanitary officer or medical superintendent officer of health, if such an officer be appointed to the sanitary district, to furnish to the Local Government Board such statistical returns of sickness and disease as shall from time to time be required from them respectively."

Now, what did the Local Government Board do immediately on the passing of the Public Health Act of 1874, and simultaneously with the issue of an Order almost identical with that from which I have quoted above? They sent a General Order to the sanitary authorities throughout the country to the effect that the salaries paid to the "sanitary officers" (medical officers of health) *should not exceed one-fourth of the amount of their salaries as dispensary medical officers.* I need scarcely say that this proceeding operated as an effectual damper on all sanitary work in the country. The local authorities could not but conclude that the central and controlling authority did not contemplate any active procedure with regard to sanitary organisation and work. The dispensary medical officers on their part naturally experienced a revulsion of feeling, and the ardour and enthusiasm with which they had entered upon their new duties gave place to the apathy which results from discouragement, and a keen sense of injustice quickly ripened into indignation. By this extraordinary order of the Local Government Board, the prospects of sanitation in Ireland were virtually ruined for the time being.

Owing to strong remonstrances made to the Government by the King and Queen's College of Physicians, the Royal College of Surgeons in Ireland, the Irish Medical Association, and the

dispensary medical officers at large, the objectionable provision by which a *maximal scale* of remuneration was fixed for the services of the medical officers of health was withdrawn when the Act of 1878 became law.

Notwithstanding the fatal experience which had been thus dearly bought at the expense of sanitation in Ireland, the Local Government Board, on the passing of the Act of 1878, proceeded to issue a circular to the local sanitary authorities, inquiring the amount of salary paid to the dispensary medical officers as such, the amount of salary paid to them under the Public Health Act of 1874, and the amount of "*additional salary* proposed to be paid to them as medical officers of health" under the new Act of 1878. As the wording of the circular did not seem sufficiently clear to the sanitary authorities, a second circular on the subject was promptly issued, explaining that the words "additional salary" used in the first circular were not meant to imply that *a salary in excess of that paid under the Act of* 1874 *was intended.* It goes without saying that this expression of opinion was hailed with delight by the sanitary authorities, and forthwith a *reduction* in the amount of the already inadequate salaries was in many instances proposed, and in several instances carried into effect, with the approval of the Local Government Board. In a few cases, on the other hand, the salaries were increased beyond the limit of the repealed maximal scale, but the increase—will it be credited?—was actually vetoed by the Local Government Board. On this subject the Irish Medical Association had a correspondence with the Board, who, while admitting that no maximal scale of salaries was observed by them, nevertheless stated that they could not exceed the scale observed by the Treasury!

That august body—the Treasury—therefore, would seem to be responsible for a deliberate violation of the provision of an Act of Parliament of the first importance, which was distinctly introduced for the avowed purpose of terminating a grievance under which the medical sanitary officers had previously laboured.

What we contend for is simply this—(1) that the Local Government Board, acting as the supreme sanitary authority, should divide Ireland into a suitable number of districts for purposes of sanitary inspection; (2) that each of these districts should be subject to the supervision of an inspecting medical officer of health, or, as such an officer is called in section 11 of the Public Health Act, a "medical superintendent officer of health;" (3) that

the dispensary medical officer should still act as district medical officer of health, reporting as occasion may arise, not directly to the local sanitary authority, but to the inspecting medical officer of health for his district; (4) that the Local Government Board, and not the local sanitary authorities, should appoint the inspecting medical officers of health; and (5) that these officials should be sanitary experts independent of the local authorities, and reporting from time to time to the Local Government Board.

As to remuneration, the inspecting medical officers of health should be paid, by the Treasury alone, a salary which would enable them to forego private practice, in order to devote their whole time and talents to the discharge of their very responsible and very onerous duties. The district medical officers of health should be paid, in equal shares by the Treasury and by the local authorities, a suitable salary—not a nominal one—subject, if you will, to a *minimal*, but not to a *maximal* scale—that is, a salary which should not be *less* than a fixed amount, say, one-half their salary as dispensary medical officers.

A system such as I have here sketched would require an amendment to section 11 of the Public Health Act, which gives merely a discretionary power to the Local Government Board to direct the local sanitary authorities to appoint medical superintendent officers of health, *when deemed necessary*. This section of the Act also contemplates the payment of the salaries of medical officers of health in part by the local authorities.

My remarks have run to such a length that I forbear to exhaust your patience altogether by dwelling upon other grievances of the medical officers of health in Ireland. Suffice it to say that ever since the enactment of the Sanitary Code of 1878, this hard-worked, badly-requited body of public servants, whose efforts for the health of the community are often misunderstood, seldom if ever appreciated, have experienced the greatest difficulty in recovering their lawful fees for work done under the Public Health Act and cognate statutes. Only within the last two years has the passing of the Labourers' Act imposed new and most troublesome duties upon the district medical officers of health, and in most cases the payment of additional fees for additional duties has been contested to the last by the local authorities. Not long ago, in Nenagh Union, the medical officers claimed the modest fee of half a guinea for each inspection of a dwelling under the Labourers' Act; the Board of Guardians,

however, fixed the fee at *two shillings*, with the sanction of the Local Government Board. This one example will illustrate the policy of masterly inactivity which has of late been systematically pursued by the Public Health Administration in this country.

What a contrast between the coldness and apathy of a lethargic administrative department and the burning words of Stokes and Acland, with which I prefaced this address.

It is a weighty impeachment; but, with a full sense of the responsibility I am incurring, I fearlessly aver that the comparative failure of the Public Health Act in Ireland is in no sense to be laid at the door of the medical profession—whether as represented by its leaders and public writers and speakers, or by its rank and file throughout the country, who have been, and are still, willing to do their duty honestly and fearlessly, if they only meet fair play. No, the fault lies with the sanitary authorities, who have so grievously misjudged the value of skilled services rendered to Preventive Medicine, and have sought to reward those services with a pittance of five-and-twenty pounds a year at most, and in many instances of one-fifth of that sum—a five-pound note, the munificent return for one year's toil in the harvest field of disease and death. What political economy is here! The bread-winner of a family perishes of enteric fever or of typhus—preventable diseases. His widow and orphans are thrown upon the rates at a cost to the ratepayers of, perhaps, ten times the yearly salary offered to the medical officer of health—looked upon as "passing rich" not "on forty," but on five "pounds a year," or threepence farthing a day.

But how came it that the local authorities were permitted to fix such inadequate salaries? Let the eleventh section of the Act supply the answer:—"Every medical officer of a dispensary district shall be"—note the *compulsory* phrase—"a sanitary officer for such district, or for such part thereof as he shall personally be in charge of, under the title of medical officer of health, *with such additional salary as the sanitary authority thereof may determine, with the approval of the Local Government Board.*" Surely it was the bounden duty of the controlling authority to refuse to sanction nominal salaries to medical officers of health, whose duties would be the reverse of nominal unless the Public Health Act was to be rendered null and void. The blame rests with the Local Government Board. A great opportunity has been lost. The enthusiasm with which a large body of educated gentlemen entered upon duties not less irksome than novel, has not merely been allowed to

die out: it has been quenched as effectually as a conflagration by a fire brigade, and by the same agency—a plentiful douche of cold water. Even if public opinion is gradually brought to bear upon the subject, sanitation in Ireland has received a check which twenty years will scarcely remedy. However, the duty of such a body as this Sub-Section of State Medicine is plain. In season and out of season let us endeavour to educate public opinion, so that, even though late, Ireland may one day reap the benefit of an ably administered, efficient, and properly remunerated sanitary organisation.

THE LEYDEN POISONING CASE.

THE current numbers of the Dutch newspapers mention that this remarkable poisoning case has advanced another stage by the completion of the "instruction," which, they say, has been "a long and tedious affair." Mary Catherine Swanenburgh, wife of John Van der Linden, appears to have made for many years past a regular trade of insuring the lives of her relatives and neighbours, and of then poisoning them and pocketing the insurance money. In the United Kingdom, most properly, no person can insure the life of another unless to protect some *bonâ fide* interest; but in Holland there is complete free trade in this repect. The poison employed was arsenic; and, although this now renders detection certain, it is wonderful that the practices of the redoubtable Vrouw Van der Linden passed quite unnoticed and unsuspected up to about a year ago. The number of her victims is believed to have been nearly forty; but the prosecution have resolved to confine themselves to six cases in which the chain of evidence is complete. These are:—Lambert Van der Linden, poisoned on the 17th of February, 1881; Arand de Hees, in October, 1881; Peter James de Hees, on the 15th of October, 1882; Susanne Aben, on the 1st of December, 1883; and, finally, Hendick Frankhuijzen and his wife, Mary Van der Linden, who were poisoned on the 8th of December, 1883. In this last case the accused was seen to drop something into the stew which was simmering for the Frankhuijzen's dinner, on partaking of which the two victims were instantly seized with horrible intestinal pains, and died in great agony. This was too much even for the quiet homely Dutch people. A chemical inquiry took place, and the orpiment was got in the stew, in the bodies of the deceased, and in the possession of their destroyer. The trial will take place next month. The Procureur-General will preside, and M. Byvelt, the Advocate-General, will conduct the prosecution. A detailed account of the trial will be given in this journal, particularly of the scientific evidence.

F. J. B. Q.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Student's Guide to Diseases of Children. By James Frederic Goodhart, M.D. Aberd., F.R.C.P.; Assistant Physician to Guy's Hospital, and Lecturer on Pathology in its Medical School; Physician to the Evelina Hospital for Sick Children. London: J. & A. Churchill. 1885. Pp. 648.

Whether the world wanted another work on the diseases of children, in addition to the volumes already existing, of which some are enumerated in the author's preface and some are conspicuous by their absence, we shall not undertake to decide—time will tell. Dr. Goodhart's manual is well qualified to take its part in the struggle for existence, and we can recommend it to the student. The language is sometimes careless, and we could have dispensed with such barbarisms as "carpo-pedal," "transferrence," "cullender," "manipulable," "cavitation," &c., but these are slight blemishes in an excellent work. It begins well, the introductory chapter being especially thoughtful and practical. We shall glance through the book and briefly notice some of the author's opinions on points of interest in the treatment of children.

The use of the gum-lancet having been recently a subject of discussion, we eagerly consulted the oracle—and received an oracular reply which did not help us much. *If* "the pyrexia be severe," and *if* "there be any threatening of convulsions," and *if* "a tooth seems to be worrying the gum close beneath the surface," why, then, "there can be no harm in using the gum-lancet." The advice reminds us of Jack Bunsby, but we must do Dr. Goodhart the justice to say that his responses are rarely so delphic as this one. In the chapter on diet, which is an excellent one, we were surprised to find *goats'* milk bracketed with asses', "either of which resembles the human milk more nearly in its poorness of curd." Surely, of the six "domestic animals"—goat, sheep, cow, ass, woman, mare—the relative quantities of casein are in the order of our enumeration? The three pages devoted to "thrush" contain

much valuable instruction. The connexion of this form of stomatitis with unwholesome, and especially with starchy, food is impressed upon the student. "I am disposed to think," says the author, "from the nicety and rapidity with which its recurrence can in some children be controlled by the regulation of the starchy matters in the food, that it is in all probability a general blood condition, which appears in those parts where local conditions—such as warmth, moisture, and irritation—favour its outbreak." "It is a case rather for dieting than for drugging." The following advice is applicable to other cases than those of thrush:—"The directions for food, stimulants, drugs, &c., should be written precisely on paper," but we are not prepared to endorse the continuation that "frequent visits should be made during the day to insure that they are intelligently carried out." In these days when bacilli and their kin are debited with every disease to which flesh is heir, we are surprised to find no allusion to Dr. Salisbury's speculation as to the connexion of measles with a specific organism, a speculation apparently confirmed by certain Australian experiences.

Twenty-five pages are devoted, and not unprofitably, to diphtheria. The popular idea of its virulent contagiousness is contradicted at the outset—"Its contagious power is not a very high one." "It is not communicated to other children or patients in a building, or carried about in clothing like measles or scarlatina." It has a tendency to combine with or follow other specific fevers, as measles, scarlatina, or enteric. In two important points it differs from other specific fevers—in the absence of an eruption peculiar to itself, and in the fact that one attack is no protection against a recurrence. The gravity of the prognosis when albuminuria is persistent and the quantity of albumen large, is pointed out; as well as the fact that the albuminuria "is a *symptom* of the disease, being present at an early period of the attack, generally by the third or fourth day." In scarlatina albuminuria is usually a *sequela*, and affords one of the means of diagnosis between the two diseases. The principle of treatment is thus stated:—"Diphtheria is in great part a local disease, and is to be treated in great part by local measures. Unfortunately, the poison in some cases becomes very rapidly generalised, and the child then suffers from a bad form of blood-poisoning, which deprives the local affection of its primary importance; and it must also be added that hitherto local treatment has not been very successful."

We hoped that the objectionable term, "typhoid" fever was passing away, but here we find it as fresh as ever. In children "a large number of cases occur with no distinctive feature of any kind."

"It is noticed that a child is ill and its temperature is found to be high—101° to 103°; a more rigorous observation is then instituted, and it is kept in bed. Then it is found that there is continuous fever with evening exacerbations for some days, accompanied by tumidity of the abdomen, and a coated or beefy condition of the tongue. At the end of ten or twelve days there are more marked remissions, or else by some sudden fall the fever ends, and convalescence is established.

"In default of any definite symptoms there is a disposition to consider cases such as these as being cases of mild typhoid. Some German authorities, however—Lebert, for instance—adopt the term 'infective gastritis' for febrile attacks of this kind, supposing, in unison with doctrines now in vogue, that the products of gastric catarrh are capable of infecting the system generally, and thus of keeping up a continued fever. The 'gastric fever' of English authors might usefully be made to convey a like suggestion, but that in common parlance it has come to be synonymous with typhoid fever. I do not wish to assert dogmatically that an infective gastritis, distinct from typhoid fever, has an existence; but I allude to the possibility of such a thing, for the purpose of impressing upon the student that in dealing—as he will often be called upon to do—with continued fever in childhood, of indefinite type, whilst treating it, as he is bound to do, with all circumspection, on the chance of the existence of enteric ulceration, he is yet ever to bear in mind that other possible causes than the assumed one have a claim to consideration, and that careful observation and record of all such indefinite types are necessary, in the hope that at some future time some order may be introduced into the at present chaotic domain of 'simple continued fever.'"—P. 226.

The differences between the manifestations of phthisis in the child and in the adult, principally dependent upon the greater activity of the processes of growth in the former, are briefly stated (p. 300). The paragraphs on symptoms and diagnosis will not be encouraging to the student. The physical signs are exceedingly ambiguous, and "it is sometimes impossible to avoid mistakes." Great stress is laid upon the importance of being on the watch for fluid, especially pus, in the pleura, empyema being common in children, and simulating phthisis in many respects. As to prognosis, "it may be accepted as certain that tubercular disease is amenable to treatment. At the same time, it is to be

remembered that these cases may ameliorate for a time, and then suddenly develop acute meningitis or general tuberculosis; and that if they do not show any tendency to improvement, the course of the disease in children is habitually shorter than it is in adults."

Dr. Goodhart, in his remarks on the treatment of chronic hydrocephalus, is cautious, if not depressing. He approves of systematic support to the skull; but he has not much to say in favour of the application of mercurial or iodide of potassium ointments, though "recommended by Gölis, Trousseau, West, and others." "Although it will often fail, it sometimes seems to do good." He is certainly right in enjoining care in the application, lest serious irritation of the tender skin of a child should be produced. The brief discussion on the pathology of chorea is most interesting and valuable. The almost invariable presence of vegetations on the cardiac valves is unquestionable; but it is by no means clear that the disease depends on embolism. Dr. Goodhart concludes that chorea is a functional disease, dependent on "some depressed state of nutrition of the intellectual or governing centres." He is sure that "the theory of capillary embolism is quite inadequate to explain the larger number of cases of chorea, and we are quite prepared for what is found to be the case—that, opposed to such facts in favour of embolism as exist, is a large body of negative evidence, where the vessels have been examined without result."

The chapter dealing with "rickets and bone-softening" is the longest in the book. It opens with a statement which appears to us somewhat doubtful—that "rickets is one of those diseases for which familiarity often breeds a certain amount of contempt in the student's mind." However this may be, the chapter gives an excellent account of the disease—"a diet disease, due to the prolonged administration of indigestible, and, for the most part, starchy, food." Other influences—as bad air, dirt, prolonged lactation, syphilis, &c.—aid in producing it; and the treatment will have to be directed to the subsidiary, as well as to the main, cause or causes. The symptoms are very carefully described. From the chapter on Syphilis we shall transcribe the passage in which an important question is discussed—Whether an apparently healthy mother should be advised to wean an obviously syphilitic infant, lest she should be infected by it:—

"This is a question that cannot be answered by a yes or no. It is held by some that the ovum can be infected through the father, and be

born syphilitic, the mother all the while remaining intact. If that be the case, the answer must be yes. But, on the other hand, there is a strong *à priori* improbability of any such freedom being possible; and there is also the fact, vouched for by many observers, that the infant thus syphilised *in utero* never contaminates the mother by suckling, although she may show no signs of having already been syphilised. If this be so, the answer will be no; for the fact is inexplicable, except on the hypothesis that the mother is already proof, in some way, against infection, and this is certainly much the more probable belief. It is almost inconceivable that a fœtus should lie *in utero* for many months, receiving from, and returning a constant blood supply to, the mother, without conveying the disease from which it is suffering, and which is known to be so easily inoculable. On the other hand, it is in consonance with all we know of infective disease, that the mode of introduction of the poison may lead to such modification of the disease as may render it more or less incapable of recognition. On the whole, therefore, it is probable that a mother that bears a syphilitic infant is proof against contagion, and may suckle her child if it be considered advisable, as, in most cases, it certainly will be. As a first thought, therefore, for the safety of the child, the mother's health must be attended to."—P. 601.

The work concludes with a valuable Appendix of Formulæ.

K.

The Elements of Physiological Physics. By J. M'Gregor-Robertson, M.A., M.B., &c. London: Cassell & Co. 1884. 8vo. Pp. 528.

We can recommend this little book to such students as desire a complete and concise account of the various physical phenomena which occur in the body. Not only are the actual processes themselves described, but such of the elementary facts and principles of Physics as are necessary to explain these processes. Most of the ordinary text-books give descriptions of physiological apparatus, but necessarily are unable to dwell on the principles which led to their adoption, and works on Physics are confined to the explanation of facts, with very little reference, if any, to their physiological aspect.

Here we find both these side by side, so that the reader has not the labour of consulting two works; this circumstance making it useful not only to the student, but also to the busy medical practitioner, to whom this work would be especially valuable.

The chapter on Electricity occupies nearly one-third of the

whole book, the apparatus used in therapeutical electricity being described as well as those used in experimental physiology.

The book is a small one, and contains over two hundred engravings, and yet the number of subjects described is very great. Some of these, however, are very elementary; indeed most of them should be familiar to the student before he enters upon the more advanced branches of his studies; but most persons are liable to forget, and they would find this little work very useful in enabling them to brush up their past knowledge with a very slight expenditure of energy.

Comparative Physiology and Psychology. A Discussion of the Evolution and Relations of the Mind and Body of Man and Animals. By S. V. Clevenger, M.D. Chicago: Jansen, M'Clurg, & Co. 1885. Pp. 247.

In this essay the author attempts to trace the development and evolution of the mind of man, which he looks on as a property of matter closely allied to chemical affinity. He professes to follow in the steps of Darwin and Herbert Spencer, and is unsparing in his denunciation of those "who cannot rid themselves of their fetiches, and whose bias prevents their intelligent examination of any physiological study."

The work abounds with ingenious speculation and argument, and will well repay the time spent in its perusal, and furnish much food for thought; but, from its nature, it would be impossible in the space at our disposal to give any intelligible abstract of it. We must, therefore, refer to the work itself those who are interested in the relations of psychology to physiology, and we can promise that they will find much of interest in it.

Guy's Hospital Reports. Vol. XLII. 1884. Pp. 489.

The first article in the volume is an affectionate *In Memoriam* of Charles Hilton Fagge, who was removed at the early age of forty-five. The essays which succeed it are almost equally divided among medical and surgical subjects. "The theory of a heat centre from a clinical point of view" has many points of physiological interest. There are also several anatomical papers. In an article on Colles's Fracture the absence of crepitus is explained by the hinge-like movement of the fragments, effected by the rotation

of the distal fragment on the proximal. In a case of hydrophobia, in which the condition of the larynx was examined during a spasm, the house physician was able to observe that the vocal cords, instead of meeting in the middle line as was expected, separated widely, and remained so for some seconds, showing that the spasm affected the abductors and not the adductors, as has always been supposed. The last article is one on "Hernia of the appendix vermiformis," in which the appendix alone formed the contents of an inguinal or femoral hernial sac.

A Manual for the Practice of Surgery. By THOMAS BRYANT, F.R.C.S. Fourth Edition, with 747 Illustrations. In 2 Vols. Pp. 846 and 674. London: J. & A. Churchill. 1884.

THIS work has been before the profession so long, and has been so favourably received, that it would be superfluous now to add anything in the way of commendation. There is not a practitioner or a student in these countries who is not familiar with "Bryant's Surgery," as one of the most useful and practical books in his library. The fourth edition, which is now presented to us, is an improvement on its predecessors, and contains much new matter. References are made to nearly all the new departures in surgery, and though they are often very meagre, we must remember that greater detail would have added considerably to the size of the volumes, which, together, number over fifteen hundred pages.

Among the illustrations we find that several excellent chromolithographs have been added, which much increase the value and interest of the book. Those illustrating the diseases of the tongue and breast are particularly good, and are well chosen.

Several chapters have been re-written and added to, while several new sections have been inserted. These deal chiefly with new methods of treatment which have lately come to the front. Among these we may mention operations on the kidney, the removal of tumours from the bladder, colectomy and colotomy. The latter, being specialities of the author's, are especially worthy of perusal. Colectomy, first performed by Mr. Bryant in 1881, is specially suited for the treatment of "localised strictures of the sigmoid flexure," and "will be found to be a valuable additional means of giving relief, and, possibly, of curing a certain proportion of cases." To be successful, it should be resorted to early, as soon as the diagnosis of organic stricture has been made, and without waiting, as is

too often the case in colotomy, till any operative procedure comes "too late." In the section on colotomy the author has inserted eight pages, which embody the tables of his 82 cases of lumbar colotomy and the results of the analysis, which he laid before the International Medical Congress at Copenhagen last year. These cases are divided into three tables. Table I. consists of 26 "cases of lumbar colotomy for cancer that died within the month—'too-late cases;'" Table II., 34 "cases of lumbar colotomy for cancer that recovered from the operation;" and Table III., 7 "cases of colotomy for simple or syphilitic stricture of the rectum that died within the month," and 15 "cases of lumbar colotomy for non-cancerous stricture or disease that convalesced after operation." From these Tables he shows that 40 per cent. of the whole number of 82 cases operated upon died within the month, and 60 per cent. of the whole number "received more or less fully the benefit of the operation."

An excellent section on bone-setting will be found in Vol. II., page 598; and the class of cases in which bone-setters succeed, and the class in which their efforts are followed too often by disastrous failure, are well described. There is, unfortunately, only too much truth in the statement he makes, that "the fact must be accepted as conclusive evidence that surgeons have, in a manner, failed to give to the public the relief that has unquestionably been given by their unqualified and so-called ignorant fellow-workers."

In any surgical work of the dimensions of the one under consideration it would be easy to find points for criticism. The present edition is remarkably free from those errors which are usually found in such works on surgery. We cannot, however, close this review without calling attention to what we must consider a great flaw, but which we scarcely hope to see removed, from our knowledge of the views held by the author on this subject. Mr. Bryant boasts of being an antiseptic surgeon, but it is on the lines laid down by himself. His remarks on "the Listerian method of dressing wounds" show not only a certain animus, which is to be regretted, but a total lack of appreciating what Lister's principle consists in. To him the application of the term "aseptic" to this method "is not acceptable, since it contains an assumption of superiority of 'the Listerian' over other forms of good antiseptic surgery, when the object of all is the prevention, exclusion, and destruction of the causes of fermentation in wounds." Mr. Bryant forgets that all *good* antiseptic surgery aims at being "aseptic,"

and that this term applies as justly to many of the methods adopted on the Continent, which agree with the Listerian only in principle, but not in detail.

Health Lectures for the People. Delivered in Manchester, 1882–83, 1883–84. Manchester: John Heywood.

The Manchester and Salford Sanitary Association have just published two courses of Lectures recently delivered under their auspices, adding another volume to the valuable series already compiled by that enterprising Society.

Carrying out a wise plan hitherto pursued by them, the committee have endeavoured to arrange the subjects comprising each course in a kind of natural sequence, so that a harmonious grouping is maintained throughout, while each lecturer is left to follow his own particular bent in the treatment of the theme allotted to him.

The first course consists of eight lectures on "Domestic Sanitation," which has been considered from three separate standpoints, commencing with the Dwelling itself. The dangers of unhealthy sites and of defective construction, the remedies for such defects, and the best modes of heating and lighting are discussed at length. To other lecturers has fallen the task of showing the influence which Food and Clothing respectively exercise on the health of the body; while the important relations which personal habits bear to the presence and absence of disease have also been ably dealt with, especially, if it be not invidious to particularise, by the Rev. G. W. Reynolds in his admirable lecture on "Thrift."

The second course, delivered in the session 1883–1884, and constituting the seventh of the series, consists of ten lectures, and is entirely occupied with the consideration of what Dr. Ransome not inaptly defines as "Sanitary Biology"—the science of the laws of healthy life. The physiological processes of respiration and digestion, of voluntary and involuntary muscular action, are clearly and popularly explained, forming texts for the elucidation of important hygienic truths. The physiology of the nervous system generally is discussed under the somewhat inappropriate title of "Thinking," and the mechanism of "Sight" and "Hearing" forms the subject-matter of two lectures, clever and interesting, though perhaps somewhat irrelevant.

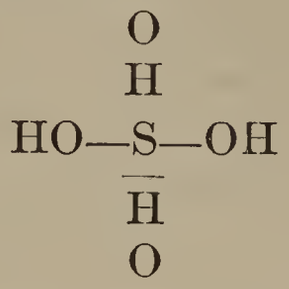
So far the lecturers have carefully abstained from any wanderings from the beaten track, and have again dished up the wholesome,

but somewhat tasteless, *rechauffé* of elementary physiology, animal chemistry, and moral philosophy, with which we are by this time so familiar. But we cannot conclude this notice without a word of favourable comment on the efforts of Dr. W. N. M'Call and Dr. Henry Simpson, who, disregarding the conventional, have boldly ventured into "fresh fields and pastures new"—the latter in his lecture on "Sleep and Rest" drawing a vivid picture of the ceaseless energy with which the vital processes are carried on when the senses are quiescent and the operations of the mind more or less completely in abeyance; while the former, in dealing with the question of *heredity*, puts forcibly before us the important practical point, that "just as peculiarities (or even accidents), not obviously hereditary in a man, may be transmitted to his descendants, so also a disease which he has not inherited but become afflicted with, through whatever cause, may be, and often is, transmitted as a disease or a disease tendency to his posterity." Dr. Simpson also strongly insists that the knowledge of this law of inherited tendency to disease should act as a double reminder, not only of the necessity of such obedience to the laws of health as should tend to the mitigation of such a condition, but also of the obligation which should bind us so to order our lives that we should be guiltless of handing down to our children diseases or tendencies to disease which have originated with ourselves.

Elements of Modern Chemistry. By Adolphe Wurtz. Second American Edition. Translated by W. H. Greene, M.D. London and Philadelphia: J. P. Lippincott & Co. 1884. 8vo. Pp. 770.

This book is a translation of the fourth edition of Professor Wurtz's excellent "Treatise on Chemistry." It is, with respect to the text, one of the best works of the kind which we have ever examined; and, with respect to paper, typography, and illustrations, it is beyond the reach of hostile criticism. As the work treats on the whole range of chemistry, it is not to be expected that any particular subject could be fully dealt with. The metalloids have most space given to them, which we consider judicious, as the principles of the science can best be illustrated in descriptions of the properties of the non-metals. So far as chemical philosophy is concerned, the student can gain all the knowledge which the study of the metals affords by investigating the properties of a

dozen of them. The author's views of the potency of some of the elements differ from those of many British chemists. For example, he regards sulphur as hexatomic, or sulphur trioxide, and gives its constitutional formula as follows :—



Most chemists consider that sulphur is dyad, and that in sulphur trioxide the oxygen atoms are chiefly grouped together. The preparation of the gases and the account of their properties are remarkably succinct and accurate. Not a word is thrown away, but not an essential word is wanting. We have rarely met with so much information in so small a compass. The number of compounds of each metal treated of is, as might be expected in an elementary work, not numerous, but those mentioned are the most important. Organic chemistry occupies 338 pages of the book. We do not find that any important compound is unnoticed. On the whole, we can strongly recommend this book as being one peculiarly adapted to meet the wants of the medical student.

Plant Analysis: Qualitative and Quantitative. By G. DRAGENDORFF, Ph.D.; Professor of Pharmacy in the University of Dorpat, Russia. Translated from the German by H. G. GREENISH, F.I.C. Baillière, Tindall, & Cox. 1884. Pp. 280.

PROFESSOR DRAGENDORFF'S reputation is sufficient guarantee of the value of any work emanating from his pen, and the one under notice will be cordially welcomed by practical chemists and pharmacists. It marks an important step forwards in the thorny path of plant analysis, and the Dorpat Professor has attempted, and with a large measure of success, to construct a method that shall comprise at once both the qualitative and the quantitative, micro- as well as macro-chemical analysis of plants and their constituents.

The translation has been admirably rendered by Mr. Greenish, who was a pupil in Professor Dragendorff's laboratory, and such alterations or additions as seemed needful have been made in the text, the proof sheets being submitted to the author. The index, although more copious than in the original, is still deficient in

fulness, but this is partly compensated by the detailed systematic table of contents which precedes the text.

The author follows the usual plan of separating plant constituents, as far as possible, by means of various solvents, preferably the most indifferent, and he has contributed much to the improvement of this branch of analysis by—first, increasing the number of solvents, and—secondly, by varying the order in which these solvents are allowed to act upon the substances under examination. He makes free use of volatile petroleum spirit (boiling point not to exceed 45° C.), because it is a relatively good solvent for most volatile and fatty oils, but not for the majority of resins, &c., which would have been simultaneously brought into solution had ether been used. Moreover, petroleum spirit does not, like ether, coagulate soluble albuminous compounds. By the successive application to the vegetable material of the following solvents the plant constituents may be separated into six groups:—

1. Petroleum spirit, extracting volatile and fatty oils, wax, &c., as well as chlorophyll.
2. Ether: resins and allied bodies.
3. Absolute alcohol: resins, tannin, alkaloids, &c.
4. Water: mucilage, acids, sugars, albuminoids, &c.
5. Dilute soda: metarabic acid, albuminoids, &c.
6. Dilute hydrochloric acid: pararabin, starch, &c.

In Part II. special methods are given for the estimation of certain constituents. The book is an invaluable treasury of analytical information, and should find its way into the hands of every scientific pharmacist, to whom it will prove a trustworthy and indispensable companion. Several useful tables are included—*e.g.*, in illustration of the behaviour to reagents of fixed oils (p. 103), and of alkaloids (pp. 179, 180).

At the end of the book are Tables which state the percentage composition of the plant constituents mentioned in the foregoing pages; and the composition of the more important components of plants arranged according to percentage of carbon.

Charley Kingston's Aunt. By Pen Oliver. London: Macmillan & Co. 1885. Pp. 315.

Dulce [*et decorum*] *est dissipere in loco!*—and so we whiled away a few pleasant hours in the past Christmas Holidays reading through "Pen Oliver's" attractive tale. The "plot" of the story turns on

the adventures of a medical student, son of the rector of a rural parish in Suffolk, who has the misfortune, or good fortune (as the sequel proves) to discover the body of his wealthy aunt in the dissecting room of his London hospital. This ghastly incident is the central pivot on which the story turns, and the clinical facts in the poor lady's case brought out by the Liverpool physician and the London consultant, "the great Dr. Wynchester," are really instructive, as bearing upon an obscure cerebral case, in which loss of memory led to a train of misfortunes, terminating with death and a pauper's fate.

Chapter XV. and those which follow it contain *pabulum* more congenial to the ordinary run of novel-readers, telling as they do of a day at the seaside and the event of a life, of a wedding and a honeymoon, and of the "silver wedding," and what it led to.

The main object of the book is to sketch the routine life of a medical student in London, and this has been effected by the author with a fair amount of success.

Baldness and Greyness: their Etiology, Pathology, and Treatment. By TOM ROBINSON, M.D. Second Ed. H. Kimpton. 1884.

How or why this book attained to the dignity of a second edition is a puzzle to us, and we should hesitate to devote any space to its recognition were it not that, for the amusement of our readers, we are tempted to extract a few samples of the author's views and peculiar modes of expressing himself.

Here, for example, is a specimen of modern physiology (p. 16):—

"Microscopic observation has revealed the important fact that the capacity of absorption and excretion possessed by the hair are about equal, and that the reciprocal action of the air and the living organism is not merely affected by the skin and the lungs, but that the hair plays a by no means unimportant part in the process. In baldness the hair has lost its excretory and absorbent canals. The harmony of the animal economy is disturbed, hence the organs—the skin and the kidneys—perform vicariously the work of the hair. The scalp perspires much more than before, and in the urine is (for a considerable time) a sediment which previously to the loss of hair was not to be observed."!!

Again (p. 45):—

"Among the other uses of the hair may be mentioned that it excretes electricity and perhaps other imponderable substances from the body, and absorbs other substances from the surrounding atmosphere."

In describing favus the author's imagination runs riot, and we learn that the favus cups can be detached from the hair, "and will be found to run up and down *like the blocks used in the rigging of a ship*," while "garlands of spores will be seen projecting from the hair like festoons. . . . Ringworm is a highly contagious disease, but it does not travel so far as favus, *being much heavier*." ! !

We do not care to multiply such tit-bits of erudition, and need only remark further on the numerous extraordinary errors in orthography, *e.g.*, Achorina schænleini, Microspora furfur, Duvergie, Trichinexis nodosa, and Favus ingenium (? unguium) !

Transactions of the Pathological Society of London. Vol. XXXV. 1884. Pp. 509.

This volume exceeds in size the preceding one by nearly 100 pages, and is illustrated with 37 plates and 12 woodcuts. It is impossible to describe in detail the variety of the interesting matter contained in the volume. The editing and arrangement of the text reflect much credit on those responsible for the undertaking.

The Curability and Treatment of Pulmonary Phthisis. By S. Jaccoud, Professor of Medical Pathology to the Faculty of Paris; Member of the Academy of Medicine; Physician to the Lariboisière Hospital, Paris, &c. Translated and Edited by Montagu Lubbock, M.D. (London and Paris), M.R.C.P. (Eng.), Assistant Physician to Charing Cross Hospital, and to the Hospital for Sick Children, Great Ormond-street, London. London: Kegan Paul, Trench, & Co., 1 Paternoster-square. 1885. 8vo. Pp. 407.

This work is translated and edited by Dr. Montagu Lubbock. That the work is written in an egotistical manner a perusal of the author's preface will be almost enough to show, in which he speaks of "the original character of certain pathological views," and of "the novelty of my conclusions and methods of treatment."

The author does not undertake to define "phthisis." Chap. I. shows him a believer in the anatomical unity, while he recognises the clinical duality of the disease. Clinically he admits two distinct varieties of the disease—one, the inflammatory or pneumonic form; the other, the chronic or ordinary form of the complaint. It is proper to observe that the book was published before the announce-

ment by Dr. Robert Koch of the discovery of the bacillus tuberculosis. Though regarding every form of phthisis as curable, he looks upon the so-called inflammatory forms as specially so by means of fibrous transformation of the tubercle, the result to be specially sought in all cases of this disease. Every form of tubercle, he says, is, from the first, liable to two forms of transformation of opposite kinds—caseous evolution at the centre, and fibrous transformation at the periphery. It is upon which of these two forms of change preponderates that the ultimate destiny of the neoplasm depends, extending as it does and involving the tissue of the organ in its own destruction should caseation and softening occur, whilst it is stationary and without harmful influence on the neighbouring parts should fibrous evolution take place in the whole diseased part. Having disposed of the curability of chronic tuberculosis or ordinary phthisis, and of pneumonic tuberculosis or phthisis, he considers that of acute miliary tuberculosis or granulosis, and cites cases which, admitting the diagnosis to have been correct, encourage the hope that the condition is not invariably fatal (p. 233).

When it is asserted that pulmonary phthisis is curable, this proposition applies only to cases in which the disease receives appropriate treatment. M. Jaccoud admits that nothing is so complex, so difficult to conciliate with the ordinary habits of life, so costly in expense, as the treatment of pulmonary phthisis. For hospital patients he thinks the very idea of recovery must be looked upon as a chimerical dream, the hospital life of consumptive patients in large towns being incompatible with the fundamental means of treatment—namely, pure air, the sun, and a country life. Treatment by mineral waters and by climate are what he lays most stress on. He admits cod-liver oil to be the medical agent which seems to be the most powerful in its therapeutic results, but gives it in very large doses—three or four ounces (100 grammes) being considered the minimal dose necessary.

Notwithstanding all Professor Jaccoud has to say on the subject, we are not converts to the doctrine of the curability of phthisis further than being ready to admit that there is a great difference in the rapidity and destructive tendency of different cases, and that those who can earliest avail themselves of the best hygienic conditions are likely to live the longest.

PART III.

HALF-YEARLY REPORTS.

REPORT ON PUBLIC HEALTH.

By Charles A. Cameron, M.D.; S.Sc.C., Camb.; M.K.Q.C.P.; Vice-President and Prof. of Hygiene and Chemistry, R.C.S.I.; Vice-President of the Institute of Chemistry of Great Britain and Ireland; Honorary Member, Societies of Hygiene, Paris, Bordeaux, &c.; Medical Officer of Health for Dublin, &c.

[*Concluded from page 149.*]

HOSPITAL CONSTRUCTION AND MANAGEMENT.

The second and concluding part of the monograph on hospitals prepared by Dr. Mouat and Mr. H. Saxon Snell has recently been published.[a] It is fully up to its first part both in text and illustrations. The book is quarto size, and, including the first part issued about a year ago, it contains 341 pages and 74 illustrations. The second part commences with a description of the Lariboisière Hospital, Paris. This institute will always be historically interesting as the first in which the principle of constructing hospital wards as detached pavilions was adopted. The principles of construction adopted in connexion with this hospital have been servilely copied in many parts of the world, though it is evident that as it was the first of its kind it could hardly have been free from some defects. It is now admitted that the Lariboisière is by no means a perfect success, but the acknowledged defects in its construction have been reproduced in many large hospitals both in Europe and America. The hospital was originally designed for the accommodation of 606, but the addition of a lying-in ward raises the total number of beds to 613, exclusive of cots for infants. The patients are chiefly located in six blocks or pavilions; each of these is a three-storied building. Upon each story there is a large room or ward having 32 beds, and a small room containing two beds. The wards are frequently overcrowded, an extra row of beds being placed in the centre of the apartment. Very often,

[a] Hospital Construction and Management. By Frederic J. Mouat, M.D., and H. Saxon Snell. London: J. & A. Churchill. 1884. 4to. Part. II.

too, the sitting-rooms are converted into temporary wards. In 1880–81 the average number of patients was 734, or 124 in excess of the number originally provided for. There are several pavilions for the accommodation of the hospital staff, the nurses, baths, laundry, store-houses, mortuary, and room for *post-mortem* examinations. The main corridors are all one story in height; they are 18 feet high, 12 feet 7 inches wide; they are enclosed, and their windows and glazed doors open towards the courtyard. The roofs form ambulatories for the patients.

The wards are 125¾ feet long, and 29 feet 5 inches wide. The ground floor wards are 17 feet high, and the others 16 feet high. The square floor space assigned to each bed is 115 feet, and the cubical space 1,963 feet on the ground floor and 1,845 feet on the other stories. The enclosed area upon which the buildings stand afford a superficial surface of 963 feet per bed.

The windows nearly face the south and north. The least distance between each and those nearest to it is 68 feet, or about 1⅙ of the height of the pavilion.

The heating and ventilating of the buildings are effected by means of two distinct systems. They were designed to maintain the temperature of the wards at from 16° C. to 18° C. (60·84° to 64·4° Fahr.), and a continuous ventilation equal to 60 cubic metres (2,119 feet) per hour per bed. The system which most perfectly fulfilled these conditions was that of Messrs. Laurens, Thomas, and Grouvelle. It, in fact, afforded 3,178 cubic feet of air per hour, whilst the other system—Duvoir Leblanc—afforded only 1,059 cubic feet per hour per bed. The ventilation arrangements of Thomas and Laurens—the heating being effected by Grouvelle's apparatus—consist of fans which propel pure air into the wards, thereby forcing out the vitiated air through vertical shafts. The fans are worked by steam power. By Duvoir Leblanc's plan the foul air is drawn into vertical flues, which pass into a shaft in which hot water stoves are placed, and to supply the partial vacuum thereby created the pure air flows in through horizontal shafts. Experience shows that the propulsion plan is more efficacious than the extraction one. Duvoir warms the wards by means of a continuous circulation of hot water in pipes. The water is heated in a furnace placed in the ground story, and passing upwards reaches a reservoir in the highest part of the building. From the reservoir pipes descend to the boiler, passing through the reservoirs and pipes which are placed in each ward. The pure air which the hot water

pipes meet with in the horizontal shafts is heated, and passes into the wards. Thomas and Laurens use *stoves* of hot water, kept heated by steam from a boiler in the lowest story. The following shows the cost of heating and ventilating by both systems:—

"Here there is given the following detail of the first cost of erecting the apparatus, which reached £16,403 16s. 7d.; and a detail of the expense of fuel and other items of cost of working the apparatus.

"System Thomas and Laurens (Right Pavilions).

"Apparatus generally - - - -	£9,814 16 0
Heating the nurses' apartments - - -	501 12 0
Foundation of the large shaft - - -	45 15 0
Plaster partitions to enclose ventilation shafts -	95 0 0
Cast-iron plates in the floors of the sick wards -	172 18 4
Total first cost - -	£10,630 1 4
The above sum at 5 per cent. per annum is - -	531 10 0
The cost of annual repairs and the working of the apparatus[a] is valued at - - - -	1,737 12 7

This latter sum is made as follows:—

An engineer with a salary of	£72 0 0	
Lodging[b] - -	8 0 0	£81 16 0
Heating and lighting -	1 16 0	
Two stokers, each at £20 a year - - -	40 0 0	
Board - - -	54 0 8	
Heating and lighting -	3 12 0	115 12 8
Linen and washing -	2 0 0	
Lodgings - - -	16 0 0	

"[a] This cost may appear considerable if it is compared with the corresponding expense, Duvoir; but we must remark that the apparatus, Thomas and Laurens, independently of their chief use, serve for three auxiliary purposes: they warm the nurses' apartments, and provide warm water and steam for the baths and wash-house. The separate cost of these latter, according to M. Grassi, may be valued at £685 11s. 8d."

"[b] The sum which represents lodging, bed-linen, and washing, was fixed in conformity with the circular of the 22nd April, 1861, which determines the money payment to which, according to their positions, the under-officers are entitled who do not receive grants; the food according to the estimate of the dietary, at the average price of the provisions. Besides, we may observe that the employés of the professional service have no right to clothing, and that the appointments of the officers of the administrative service are given at their actual figure, and are susceptible of being modified in consequence of periodical increases. As to the amounts given for the servants' lodging in the house, they have been calculated from the net cost given by the accountant's office."

A Labourer - -	9	12	0		
Board - - -	21	10	11	32	18 3
Bed and Linen - -	1	2	5		
Washing - - -	0	12	11		
Coal, about 832 tons	1,386	7	4		
Various repairs, about -	84	0	0		
Miscellaneous expenses (oil, oakum, white lead, borax, wood, soap, &c.), about -	32	0	0	1,507	5 8
Lighting the apparatus -	4	18	4		
				£1,737	12 7
Total cost of maintenance per annum,				£2,269	2 7

"System Duvoir Leblanc (Left Pavilions).

"Apparatus generally (original contract) - -	£5,600	0	0
Experiments - - - - -	26	0	0
Ventilation of the three dirty linen depôts - -	128	2	5
Ventilation and sanitation of two private water-closets	19	12	10
Total first cost - - -	£5,773	15	3
The above sum at 5 per cent. per annum is - -	288	13	9
The cost of annual repairs and working of the apparatus is valued at - - - - -	663	10	3

This latter sum is made up as follows:—

Annual payment for keeping up the apparatus, including fuel - -	£628	2	10
Journées de ventilation supplémentaire	22	14	4
Lighting the apparatus - -	6	13	1
Lodging of a stoker - - -	6	0	0
	£663	10	3

Total cost of maintenance, per annum - -	952	4	0
Now, by adding to this last sum the annual cost of the other system - - - - -	2,269	2	7
We find that the annual cost of working both systems of heating and ventilation comes to - -	£3,221	6	7

"This large first cost, and the not less important outlay for fuel and maintenance, which the daily working of the Thomas and Laurens apparatus necessitates, have long since decided the administration to consider another system of mechanical ventilation, less expensive, but

sufficiently efficacious to secure a thorough renewal of the air in the wards. It has been shown in Section II. of Husson's 'Étude sur les Hôpitaux,' pages 57 and 58, which treats especially of the different methods of ventilation in use in hospitals, how the administration came to give the preference to the system of Dr. Van Hecke, on account of its simplicity and economical daily cost. M. Husson says:—

"'Van Hecke sends pure air through a hot water heater before it comes into the ward.

"'The examining committees charged by the hospital administration to study the question have proved, by their interesting labours, that ventilation which is effected by means of air being forced in is preferable to that which is caused by air being drawn out, and it seems doubtful to us that the investigations which the administration are again making, aided by a committee of scientific men, can possibly modify this first opinion.

"'On the other hand, the administration, without concealing from itself the imperfections of the system and certain errors in the application of it which have been made, is led to consider that the method of Dr. Van Hecke to this day deserve the preference.

"'The apparatus of this inventor are, in fact, simpler and less expensive, both in first cost and maintenance, and they have not the inconvenience of being above the ceiling and producing leakages of water and steam so detrimental to the buildings.'

"M. Grassi, whose special works on the ventilation of sick wards is well known, desired to ascertain the results produced by the different apparatus of the systems Duvoir, Thomas and Laurens, and Van Hecke, in relation to the first cost and maintenance of each. He has given, in relation to this, the figures shown in the following Table. We give it here under all reserve; for numerous experiments which followed, but whose results have not been definitely proved, apparently give noteworthy differences between the qualities of air renewed and those which are indicated by M. Grassi:—

System	Establishment where they were employed	Quantity of air renewed per hour per bed	Prime cost per bed	Annual expense of fuel and maintenance per bed	Net cost of the unit of ventilation (1 metre furnished per hour all the year round)
		cubic feet	£ s. d.	£ s. d.	£ s. d.
Duvoir - -	Necker and Lariboisière - -	1,059	19 4 0	2 0 10	0 2 8¼
Thomas & Laurens	Lariboisière -	3,178	32 6 5	4 0 10	0 1 5
Van Hecke -	Beaujon and Necker	3,425	9 8 10	1 2 5	0 0 6

"The draught of the ventilating chimney, doubtless, brings into the ward more than 1,059 cubic feet; but M. Grassi has not taken into account the quantity of air which comes in through the cracks of the doors and windows, and which he considers as inefficacious for the salubrity of the wards."

The sanitary accommodation is situated at the end of each ward and is entered directly from the latter which, it need hardly be said, is a defect in the construction of the hospital. The small wards—each for two persons—are all situated close to the water-closets, and they are too remote from the nurses' rooms.

The lying-in wards were originally on the first floor in the women's pavilions, but owing to the great mortality in them a separate building for the treatment of cases of puerperal fever was built. This building consists of a single story, and contains seven wards, each 13 feet long and 11½ feet wide, and containing one bed. The floor of each is cemented, and has only an India-rubber matting upon it, and there are very few articles of any kind in the room. There are no windows to three of the wards, except the fan-lights over the two entrance doors, which open out on a verandah. There are double casements in the other wards opening inwards, and with fan-lights over them hung as curtains.

"For the ventilation of each ward there is a hole about six inches in diameter in the centre of the ceiling, with a tube carried through the ridge, and terminating with a terra-cotta ornamental chimney. M. Tollet, who was so kind as to accompany me over the building, said that 80 cubic metres (2,825 feet) of air pass through this ventilator per hour.

"The construction of the wards is, in section, that of a pointed arch, 'à forme ogivale,' so that the four side walls rise perpendicularly to a height of eight feet, and then, as they continue upwards, are made to converge towards the centres of the room at a considerable height (15 feet 9 inches) above the floor; it is at this central point that the ventilator described in the last paragraph is fixed. M. Tollet asserts that this formation of the sides of the room induces steady and constant ventilation in the simplest and most perfect manner, and he also points out that there are no surfaces for the lodgment of dust and organic matter.

"It will be seen by the plan that each ward is entered from the outside, under the cover of a verandah, six feet wide, and therefore complete isolation is effected."

Of the Hôtel Dieu, the authors give an unfavourable account.

Its defects of construction became so conspicuous that before its completion it was resolved to convert it to some other purpose. In 1872 the Société des Médecins et Chirurgiens unanimously came to the conclusion that, "as it at present stands, the new Hôtel Dieu is so constructed as to be absolutely contrary to the fundamental principles of hospital sanitary law." The hospital was, however, opened for the reception of patients, but some of its more serious defects have been remedied. The authors state that the Tenon Hospital, Menilmontant, is one of the best of the Paris hospitals, though by no means perfect in construction. It was opened so lately as November, 1878. The extent of the site is 782 feet per bed. The superficial space is 107 feet, and the cubical space 2,030 feet per bed on the ground floor, and the same superficial space and 1,816 cubical feet on the second floor. The situation of the water-closets and sinks is open to the same objection in the case of the Lariboisière Hospital and Hôtel Dieu.

The Hospital of St. Denis is distinguished by the great size and remarkable height of its wards. They are 22 feet in height, and five afford the enormous cubical space of 2,457 feet per bed. In these countries it is not thought necessary to give, at the very outside, more than 1,500 cubic feet per bed, and 1,000 feet is a common allowance. This large space is necessary, according to the theory of M. Tollet, an eminent engineer, but even the most air-loving British sanitarian would consider such an amount not only as unnecessary, but as undesirable, except perhaps in typhus fever or small-pox wards. With respect to the situation of the sanitary accommodation, M. Tollet is in accord with British sanitarians in having it separated from the wards by cross ventilated corridors. The estimation in which M. Tollet is held, as what may be termed a sanitary architect, is shown by the formation of the "Société Nouvelle de Constructions-Systeme Tollet." His claim to originality rests upon the peculiar construction of the wards, which have elongated pointed arches. The sides of the walls and roofs consist of curved wrought-iron I-shaped ribs, placed about five feet from centre to centre, and filling in with tiling and brickwork or cement. The outer surfaces of the roof consist of cement or tiles, and the inner surface of plaster, covered over with three coats of oil paint. It is claimed for this kind of building that it is incombustible, that the absorption of disease germs and organic matter by the walls is prevented, that the free passage of air is not impeded, and, lastly, that after epidemics the whole of the inside faces

of walls and roofs can be treated by flames of gas or streams of water.

There is but one hospital in Holland which, according to Messrs. Mouat and Snell, is constructed upon fairly sound principles; this is the Amersfoort Military Hospital. Each ward is warmed by two stoves, which stand centrally between the feet of the beds. They are so constructed that air brought from the outside and beneath them passes round the heated iron surfaces next the fire and flue-pipes, and enters into the room through the upper part of the casings which surround the whole apparatus. Iron-moulded rims form cornices round the casings; they contain water, the evaporation of which keeps the atmosphere from becoming desiccated. As to lighting:—"There are three windows in each side wall, and the effective glazed surface in each ward is 183 feet, or 15 feet 3 inches per bed. The glazed sides of the lantern light are not taken into consideration, as they are obscured when the louvred ventilators, as they mostly are, are opened. The sashes are constructed somewhat peculiarly; the top portion of each one for about one-third of the total height of the window opening is hung by pivots on its bottom rail, and can be made to fall forward into the ward by means of lines and pulleys; the lower two-thirds of the height is in one piece, and hung as an ordinary sliding sash with lines and weights, and it will be seen that as this lower portion is opened it more or less prevents air entering through the upper part. The windows are not, as they should have been, placed mid-way between each two pair of beds."

This Dutch hospital is not overcrowded, as the cubical space allowed to each bed amounts to 1,585 feet. The arrangements for the removal of excreta is the weakest part of the institution.

Amongst German hospitals Mr. Snell assigns the first place to that in connexion with Halle University; it is not quite completed. Mr. Snell considers that there are many points of interest in connexion with the construction of this hospital. It has not been described by any German writer, and Mr. Snell's description of it is the first published. We shall make some extracts fron this description. The medical wards are contained in a central building provided with two wings, all of two stories, and two detached pavilions of one story. "The basement floor is sunk about half its height below the general ground level, and contains rooms for the use of the porter and other male attendants. In the two wings there are, on this floor, four rooms,

two on either side, and each for the accommodation of 6 syphilitic patients, with the usual attached offices; likewise, on each side, a room for the reception of 3 lunatic patients, with a padded room attached. The ground floor contains the out-patients' department, with lecture hall, rooms for the conduct of therapeutic, electric, laryngoscopic, and microscopic investigations; also the director's, assistant doctor's, and porters' rooms. In each of the two wings on this floor there is a ward, with the usual attached offices, for the accommodation of 12 patients, and also three smaller rooms, one being for the accommodation of 3 ordinary patients, and two for 1 private patient each. On the first floor there is another lecture hall, a library, the matron's apartments, and additional assistant doctor's rooms; likewise, in each wing a ward for the accommodation of 12 patients, with the usual attached offices, another for 3 ordinary patients, and two for 1 private patient each. In the central portion there is a ward for the accommodation of 6 children, with an isolation ward for 2. The outer pavilions will be more particularly described hereafter; they each contain accommodation for 16 patients in one large ward, and a separation ward for 1 patient. The accommodation provided in this department is as follows:—

Two wards for 16 patients each				...	..	32
Four	do.	12	do.	...	..	48
Five	do.	6	do.	...	..	30
Six	do.	3	do.	...	..	18
One	do.	2	do.	...	...	2
Twelve	do.	1	do.	...	...	12
			Total	...	...	142"

The gynæcological department is contained in a building two stories in height above the basement floor. The wards contain for the greater number 4 beds each, only one out of the 142 having accommodation for 6 patients. The block is well separated from the other buildings.

The surgical department is contained in buildings which consist of two pairs of pavilions connected by corridors.

"*Aspect.*—The axes of these buildings run nearly directly east and west (E. by N. and W. by S.), so that the windows of the wards face north and south (N. by W. and S. by E.)

"*Relative Position of Pavilions.*—The height of the buildings, as measured from the ward floors to the junctions of the upright lines

of the outer front walls with the sloping lines of the roofs, is 24 feet 3 inches, and the least distance between any two of the blocks is 55 feet, or about $2\frac{1}{4}$ times the height.

"*Size of Wards.*—The large walls are of parallelogram shape, and those furthest from the main block each contain 24 beds. They are each 114 feet long, 29 feet 6 inches wide, and an average height of 15 feet 9 inches. The total superficial floor space is, therefore, 3,368 feet, or 142 feet per bed, and the cubic contents 53,046 feet, or 2,210 feet per bed. The wards of the pavilions nearest to the main block are somewhat shorter than the above, and contain 20 beds only, but otherwise they are similarly planned.

"*Bed Space.*—The average lineal wall space per bed is 9 feet 6 inches.

"*Windows.*—The sashes in the lower portions of the windows of the side walls are hung as folding casements, and the sashes of the upper portion are made to open by lines and pulleys; they are all glazed with sheet glass, and the total area of their effective glazed surface is 624 feet, or 26 feet per bed. When all the windows are opened to their fullest extent the total area through which air can be admitted by them into the wards would be 768 feet, or 32 feet per bed.

"*Warming and Ventilation.*—The arrangements for the warming and ventilation of these pavilions are generally similar to those of the medical department, but instead of the steam passing through coils it is carried round the walls next the floors and at the backs of the beds by means of cast-iron pipes, every alternate length of which has a series of gills for the purpose of more quickly radiating heat.

"*Flooring.*—The floors of the large wards are formed by brick vaulting covered with concrete, the surface being finished with 'terrazzo,' a material formed of marble chippings bedded in concrete, then ground to an even surface, and, when dried, polished.

"*Walls.*—The finished thickness of the walls of these buildings is about 10 inches, and they are formed of timber framing, 5 inches in thickness, wrought and stopt chamfered on the outside, and filled in with brickwork, finished internally with wall boarding, and tastefully decorated by painting.

"*Water-closets, Bath, &c.*—The water-closets are each 3 feet 9 inches long and 3 feet 4 inches wide, and are contained in a compartment leading out of the ante-room at the end of the ward. The apparatus is similar to those for the medical pavilions.

"The bath-room averages 9 feet 9 inches long, 6 feet 4 inches wide, and is fitted with a movable metal bath. The lavatory is a room 11 feet 5 inches long, 6 feet 4 inches wide, and is fitted with five wash-basins ranged down one side.

"*Duty Room.*—This room, like those of the medical pavilions, forms the entrance-hall of the building. It is 33 feet 6 inches long and 13 feet wide, and is fitted with warming apparatus, sink, shelving, and other usual appurtenances.

"*Verandah.*—On the southern side of each pavilion there runs the full length of the ward an outside covered verandah, and from it at either end are flights of steps leading to the airing yards below. These verandahs are about 10 feet wide, and can be entered from the wards by means of two folding casement doors.

"*Nurses' Room.*—At the further end of each large ward is a nurses' room, 11 feet 5 inches long and 6 feet 4 inches wide, and it has an area, therefore, of 72 feet 4 inches.

"*Ante-Room.*—This room, which is 13 feet long and 9 feet 9 inches wide, forms the means of communication between the ward and the bath, lavatories, and water-closets; it also contains a small staircase, which gives access to store rooms situated in the basement.

"*Basement.*—The floors of the wards are raised about 8 feet high above the outside ground on an open-vaulted basement; the ends are covered in and made use of as store rooms; the central portion is left open.

"*Total Area of Pavilions.*—The total area covered by each of the pavilions furthest from the main block, including its offices, but exclusive of the verandah, is 4,571 feet, or 190 feet per bed. If the verandah be added the area is 5,800 feet, or about 242 feet per bed, whilst for the pavilions nearest to the main block, the area covered, exclusive of verandah, is 3,960 feet, or 198 per bed, or, with the verandah, 4,994 feet, or 249 feet per bed."

ON SANITATION IN PUBLIC BUILDINGS.

The Council of the London Statistical Society, having offered a medal and £20 for the best essay on the experiences and opinions of the philanthropist, John Howard, Mr. R. D. R. Sweeting, M.R.C.S., Eng., has been successful in winning these prizes. His essay has recently been published in a volume of 97 pages, and is well worthy of perusal. We have always regarded Howard as a philanthropist who devoted his energies chiefly to the amelioration of the condition of the inmates of the wretched prisons of the

last century, but we learn that he was a sound and successful sanitary reformer. The author gives the observations of Howard on the condition of a great many hospitals and other charitable institutions in Great Britain and Ireland. With respect to Irish hospitals, he found that Mercer's Hospital, on his first visit, was dirty, offensive, and unhealthy; but on his subsequent visit he found it clean. The Military Hospital swarmed with vermin. The children at the Foundling Hospital had no allowance of soap, though many had inherited scrofula, and some of them had eruptions on their hands. At the Milltown-road Nursery, Dublin, the children were unhealthy, being much affected with "evil" and "scald head." They were very dirty and badly clad. The dietary at the Protestant charter schools was insufficient, the children being half-starved; consequently, they were sickly. In the Bluecoat Hospital, no vegetables were allowed to the boys; they had only a very small play-ground. All our institutions were not, however, in so unsatisfactory a state. The Meath Hospital was, at that time, situated in the Coombe, which was then a densely-peopled district; Howard, however, found it in good order, clean, and free from bad odours. He speaks favourably of the cleanly state of the House of Industry Hospitals, North Brunswick-street.

With respect to the country parts of Ireland, Howard, on the whole, found the condition of the charitable institutions unsatisfactory. At the Kildare County Infirmary there was an excellent bath, but it was not used. The children at the Frankfort, Loughrea, Shannon Grove, Ardbraccan, Castlecarberry, Farna, and Dunmanway schools, were sickly and dirty. Those at Innishannon school suffered from scald head and itch; and, according to Howard, an outbreak of fever amongst them was the result of uncleanliness.

The Infirmary at Roscommon was not provided with sewers. There was no sanitary accommodation in connexion with the Infirmaries at Omagh and Maryborough, nor in a great many of the endowed schools. At Castlebar Infirmary there were latrines in a small court, but they were defective in construction, and were in a most offensive state. The patients in Mullingar Infirmary were unprovided with artificial heat in winter. At Cavan Infirmary he found no bedding, and but very little at the County Infirmaries of Wicklow, Clare, and Kildare. At Wicklow and Navan Infirmaries the bedsteads were old, decayed, and swarming with vermin. The beds in the Armagh County Hospital were contained in cupboards! In the South Infirmary, Cork, the beds were unprovided with

sheets, and the blankets were very filthy. Wilson's Hospital, Westmeath, Ennis County Infirmary, and Castlebar Infirmary, were very dirty. At the Cavan Hospital the court-yard contained a dunghill, and the upper rooms were the abodes of fowl.

A large number of the institutions visited by Howard were found to be deficient in water supplies, whilst the quality of the water was often very bad.

Some of the County Infirmaries were found in a better condition, Abundance of clean straw was provided for the patients in the Omagh Infirmary; the inmates of the Tullamore Infirmary were well warmed. Several of the hospitals were kept in a cleanly condition, and were well sewered. It is satisfactory to learn that many of Howard's suggestions, for improving the hygienic condition of the institutions, were adopted. The condition of the prisons, hospitals, and schools in these countries is now very different from that described by Howard, though, in a sensible proportion of them, far from being perfect.

COMPOSITION OF THE ASH OF ANIMALS.

Messrs. Lawes and Gilbert, of Rothamstead, have made very elaborate investigations into the composition of the carcases of animals used as human food. Their latest contribution to this subject appears in the "Philosophical Transactions" for 1883, Part III. It deals with the composition of the mineral part, or ash of animals. The results of these investigations are of great value; and they are useful, too, as comparative data in connexion with the analysis of the body of man. It would appear that, on the average, the stomachs and intestines, and their contents, after the animal had been some time without food, make up 14·35 per cent. of the weight of the ox, 10·96 per cent. of the weight of the sheep, and 7·52 per cent. of the weight of the pig. Their heart and aorta, lungs and windpipe, liver, gall-bladder, and contents, pancreas and spleen, constitute 2·96, 3·3, and 3·01 per cent. respectively of their weight. Blood makes up 4·01 per cent. of the weight of the ox, 3·97 of the sheep, and 3·63 of the pig. Therefore, all the above-mentioned parts constitute 21·32 per cent. of the weight of the ox, 18·23 of the sheep, and 14·26 of the pig.

The following Table shows the amount of ash in the offal and in the carcase parts of the ox, sheep, and pig:—

Percentage of Pure Ash in the Fasted Live-weight.

	Pure Ash		
	From Carcase parts	From Offal parts	From Total parts
	Per cent.	Per cent.	Per cent.
Fat Calf, - - - -	2·772	1·006	3·779
Half-fat Ox, - - - -	3·568	1·044	4·612
Fat Ox, - - - -	2·997	0·882	3·879
Fat Lamb, - - - -	2·162	0·719	2·881
Store Sheep, - - - -	2·317	0·747	3·064
Half-fat Old Sheep, - - -	2·207	0·848	3·055
Fat Sheep, - - - -	1·970	0·700	2·670
Very fat Sheep, - - -	1·744	1·123	2·867
Store Pig, - - - -	1·699	0·954	2·652
Fat Pig, - - - -	1·054	0·581	1·635

These results show that the offal parts are very much poorer in mineral matters than the carcase parts; but as a portion of the latter consists of bones, it is probable that the edible portion of the carcase parts is not much richer in ash ingredients than the heart, liver, &c.

The following shows the composition of the ash of the ox, sheep, and pig:—

Percentage of Crude Ash, and of Pure Ash (excluding Sand and Charcoal), and Percentage Composition of the Pure Ash.

	Collective Carcase Parts.									
	Fat Calf	Half-fat Ox	Fat Ox	Fat Lamb	Store Sheep	Half-fat old Sheep	Fat Sheep	Very fat Sheep	Store Pig	Fat Pig
	Per cent.	Per cent.	Per cent.	Per cent.	Pe cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Crude ash, -	4·48	5·56	4·56	3·63	4·36	4·13	3·45	2·77	2·57	1·40
Pure ash, - -	4·46	5·51	4·53	3·61	4·34	4·12	3·43	2·76	2·56	1·39
Peroxide of iron,	0·39	0·62	0·56	0·43	0·36	0·49	0·40	0·39	0·63	0·64
Lime, - -	43·93	46·89	47·02	46·83	45·43	46·21	46·65	47·36	40·35	38·59
Magnesia, -	2·09	1·71	1·70	1·79	1·86	1·76	1·81	2·05	2·13	2·08
Potash, - -	5·90	4·87	4·54	4 62	5·18	5·07	4·65	3·78	8·47	9·68
Soda, - -	3·08	2·60	2·59	2·47	2·97	2·65	2·80	2·74	3·72	4·40
Phosphoric acid,	41·54	40·00	40·40	40·37	40·36	40·62	40·84	41·00	40·02	40·19
Sulphuric acid, -	1·03	0 66	0·69	0·81	1·24	0·50	0·53	0·47	1·96	1·26
Carbonic acid, -	1·14	1·80	1·68	1 82	1·40	1·84	1·47	1·63	1·17	1·26
Chlorine, - -	1·02	0·75	0·88	0·93	1·46	1·02	0·93	0·70	1·81	2·25
Silica, - -	0·11	0·27	0·14	0·14	0·07	0·07	0·13	0·04	0·15	0·17
Total, -	100·23	100·17	100·20	100·21	100·33	100·23	100·21	100·16	100·41	100·52
Deduct O = Cl.	0·23	0·17	0·20	0·21	0·33	0·23	0·21	0·16	0·41	0·52
Total, -	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00

Percentage of Crude Ash, &c.—continued.

COLLECTIVE OFFAL PARTS (EXCLUDING CONTENTS OF STOMACH AND INTESTINES).

	Fat Calf	Half-fat Ox	Fat Ox	Fat Lamb	Store Sheep	Half-fat old Sheep	Fat Sheep	Very fat Sheep	Store Pig	Fat Pig
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Crude ash, -	3·41	4·05	3·40	2·45	2·19	2·72	2·32	3·64	3·07	2·97
Pure ash, - -	3·37	3·98	3·33	2·31	1·95	2·40	1·96	3·54	3·04	2·93
Peroxide of iron,	1·10	1·32	1·78	2·41	3·68	3·73	4·87	2·09	0·90	1·31
Lime, - -	41·39	44·51	41·16	35·91	36·42	37·35	35·22	36 97	41·77	41·07
Magnesia, -	1·68	1·42	1·28	1·67	1·77	1·57	1·81	1·69	1·79	1·59
Potash, - -	4·46	3·10	4·80	9·28	7·25	7·37	7·89	8·23	5·60	5·99
Soda, - -	6·53	5·56	6·41	6·91	6·99	5·58	6·03	7·29	4·81	4·86
Phosphoric acid,	39·26	38·12	39·27	34·86	33·60	35·24	33·15	35·07	40·87	39·85
Sulphuric acid, -	1·19	1·23	1·59	3·42	2·87	3·17	3·36	1·82	1·23	1·50
Carbonic acid, -	1·14	1·76	0·90	0·39	0·92	0·99	1·07	1·81	0·67	1·40
Chlorine, - -	3·80	3·30	3·07	4·74	5·31	3·38	3·72	4·76	2·58	2·99
Silica, - -	0·31	0·41	0·43	1·48	2·40	2·38	3·72	1·34	0·34	0·28
Total, -	100·86	100·73	100·69	101·07	101·21	100·76	100·84	101·07	100·56	100·84
Deduct O = Cl.	0·86	0·73	0·69	1·07	1·21	0·76	0·84	1·07	0·56	0·84
Total, -	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00

ENTIRE ANIMAL FASTED LIVE-WEIGHT (BUT CONTENTS OF STOMACH AND INTESTINES EXCLUDED).

Crude ash, -	3·80	4·66	3·92	2·94	3·16	3·17	2·81	2·90	2·67	1·65
Pure ash, - -	3·77	4·61	3·88	2·88	3·06	3·06	2·69	2·86	2·65	1·64
Peroxide of iron,	0·53	0·97	0·41	0·84	1·24	1 35	1·00	(1·05)	0·91	0·76
Lime, - -	43·95	45·26	46·62	44·57	43·12	44·39	44·61	(43·29)	40·58	38·49
Magnesia, -	2·20	2·03	1·53	1·82	1·82	1·72	1·79	(1·90)	2·01	2·04
Potash, - -	5·40	4·41	4·46	5·74	5·64	5·27	5·53	(5·53)	7·39	8·57
Soda, - -	3·82	3·08	3·04	3·58	3·90	3·35	3·56	(4·52)	4·16	4·36
Phosphoric acid,	40·37	40·22	39·80	38·96	38·96	39·15	38·72	(38·68)	40·12	40·14
Sulphuric acid, -	1·08	0·86	0·79	1·18	1·78	1·06	1·01	(0·99)	2·33	2·15
Carbonic acid, -	1·34	1·97	2·13	1·53	1·09	1·83	1·67	(1·70)	0·60	1·20
Chlorine, - -	1·55	1·24	1·47	1·86	2·31	1·61	1·61	(2·30)	2·22	2·78
Silica, - -	0·12	0·24	0·08	0·33	0·67	0·63	0·86	(0·56)	0·18	0·14
Total, -	100·36	100·28	100·33	100·41	100·53	100·36	100·36	(100·52)	100·50	100·63
Deduct O = Cl.	0·36	0·28	0·33	0·41	0·53	0·36	0·36	(0·52)	0·50	0·63
Total, -	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00

It is interesting to note that the composition of the ash of the carcase parts differs so little, except as regards quantity, from the ash of the offal parts, although the bones are included in the former, the amount of phosphate of calcium is nearly the same in both cases. The amount of bone phosphate is very great, amounting

to more than 80, and in some cases nearly 90, per cent. of the total weight of the ash. The fact that nearly 4 per cent. of the weight of a half-fat ox is composed of phosphate of calcium is an interesting physiological fact; it is probable that as large a proportion may exist in the body of a man. The question of the supply of an adequate amount of phosphate of calcium in our food is a question often discussed, especially in relation to the use of brown bread. It is clear that we require abundance of phosphates in our food.

HYDROCHLORATE OF COCAIN IN PRURITUS ANI.

Nearly four weeks since, Mr. Malcolm Morris, F.R.C.S. Ed., was consulted by a middle-aged gentleman of very careworn appearance, who had for years suffered from this complaint. From the first, a good night's rest had been a thing quite unknown to him, his sleep having consisted of snatches of an hour or so at a time, out of which brief respites the intense irritation and pricking in the anus would cause him to start, and to lie awake for hours in a state of the keenest misery. Finding, on examination, nothing beyond a slight thickening of the skin-folds from scratching to account for the disease, he ordered a twenty per cent. solution of hydrochlorate of cocain with five per cent. of glycerine, to be applied in the following manner:—Lying on his back, the patient was to force down and extrude as much mucous membrane as possible, and this part, as well as the skin surrounding the anus over a surface of about one inch and a half radius, was first to be thoroughly washed with warm water, and afterwards painted with the solution three times at intervals of ten minutes, the part being allowed to dry somewhat after the third application before moving from the recumbent position. As the result of this treatment, the patient slept quietly for seven hours. This method had been persevered with night and morning for more than a week, without any return of the distressing symptom, when circumstances occurred which caused the remedy to be neglected for two days, whereupon the irritation recommenced with its former severity. The treatment was then resumed, and relief was once more obtained, and a continuance of the process during the last fortnight has produced the most satisfactory results. It is too soon yet to speak of cure, as, of course, the mischief may return on discontinuing the treatment; but, at any rate, the freedom from torture is daily giving the patient strength to meet such an eventuality. Meanwhile, and without accepting the patient's extravagant estimate of the remedy, it may fairly be put on record that, in one case of a malady usually most difficult to relieve, signal benefit has attended the use of this new and valuable local anæsthetic.—*Brit. Med Journal*, Jan. 24, 1885.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ACADEMY OF MEDICINE IN IRELAND.

President—J. T. Banks, M.D.
General Secretary—W. Thomson, M.D.

SUB-SECTION OF STATE MEDICINE.

Chairman—Dr. J. W. Moore.
Secretary—Dr. H. C. Tweedy.

Opening Meeting, Thursday, February 5, 1885.

Dr. J. W. Moore in the Chair.

The Chairman's Address.

The Chairman delivered an inaugural address on the relations of the medical profession to the sanitary organisation of Ireland. [It will be found at page 197.]

On the motion of Dr. Cameron, seconded by the Registrar-General, thanks were voted to the Chairman for his address.

Sewer Gas and Disease.

Dr. E. MacDowel Cosgrave read a paper on sewer gas and disease. He pointed out that, in spite of the Dublin street sewers being well ventilated, it is certain that if imperfections exist in the house drain, sewer gas will enter, as the outer air is generally denser than that in houses, and as the up-draft of fires causes a strong suction. At present many houses have rubble drains, which are always imperfect, and of the pipe drains many are defective, and hardly any houses are properly disconnected from the street sewers, dependence being placed upon water traps, which are untrustworthy as excluders of sewer gas. The remedy is to have a properly-set pipe drain cut off from the sewer by an intercepting trap and ventilated by openings at each end at different levels to cause a constant current of air. Occasional flushing with a sudden

forcible rush of water will render such an arrangement almost perfect. Sewer gas seems to affect health in two ways—(1) as a direct poison, causing sore throat, diarrhœa, &c.; and (2) by devitalising the oxygen of the air, and so leading to anæmia, lassitude, depression of spirits, &c. The symptoms often show first in servants who sleep in the basement. Surgical operations and confinements are specially liable to be followed by mischief if sewer gas can find entry. The sanitary protection department of the Dublin Sanitary Association affords a reliable means of examining into house drainage; and the engineer to the department (Mr. W. Kaye Parry, M.A., C.E.) states that the following grave sanitary defects were found in some of the houses he examined:—Rubble drains under house, 26 per cent.; defective pipe drains, 61 per cent.; drains not intercepted from sewers, 65 per cent.; unventilated drains, 75 per cent.; w. c. objectionable, 83 per cent.; soil pipe leaking, 44 per cent.; scullery dangerously trapped, 50 per cent. In many cases disease accompanied the foregoing defects, especially enteric fever, diphtheria, and illness after confinements. Medical men ought, in the interests of preventive medicine, to have drains, &c., put right before outbreaks of illness, and not wait for illness to call their attention to defective drainage.

Dr. Cameron gave several instances of defective drainage, and said, in reference to exhalations from ventilators, that experiments proved there was an influx of air into drains in the morning when fires were lighted.

Dr. Grimshaw, Registrar-General, remarked that instances came under his notice of the defective line and falls in some of the public sewers in Dublin, and the consequent difficulty in obtaining sufficient falls in house drains in some localities. There was one case where the Engineer of the Sanitary Association was unable to provide a complete and efficient system of house drainage in a particular place, because the level of the street sewer was not sufficiently below the level of the floor of the basement story of the house. In this case it was impossible to put in an intercepting trap.

Surgeon-Major Hamilton mentioned the steps he took for the ventilation of the barrack sewers of Dublin garrison.

Dr. Jacob, Dr. Doyle, Dr. Henry Kennedy, and the Chairman, having taken part in the discussion, Dr. Cosgrave replied, and

The Sub-Section adjourned.

PATHOLOGICAL SECTION.

President—A. W. Foot, M.D.
Sectional Secretary—P. S. Abraham, F.R.C.S.I.

Friday, Jan. 16, 1885.

The President in the Chair.

Congenital Dislocation of the Hip.

The President of the College of Surgeons (Dr. Bennett) exhibited some specimens of congenital dislocation of the hip-joint. The first was taken from a child, aged six years, who died last spring in Sir Patrick Dun's Hospital. At the time of her admission he had little hesitation in diagnosing double congenital dislocation of the hip. The child was then perfectly healthy in other respects. The midwife who attended at the child's birth stated that the presentation was normal and the labour perfectly healthy. In the first two years the deformity was not noticeable, but it was observed that she was slow in walking, and that she began to waddle. The first question arising was whether the increasing lameness could be arrested. She could stand with ease and steadiness, and could run with facility, but could walk only indifferently. Being attacked with scarlatina, of which there was an epidemic in the ward, signs of tubercular meningitis appeared, and after a couple of weeks she died. He was able to exhibit only the pelvis and the upper extremities of the femora. The gluteus maximus on both sides was reduced in part to a membrane, and the muscular fibre was almost entirely replaced by fat and tough fibrous tissue. The casts exhibited showed how complete was the separation of the knees, and also that inversion was wholly absent. No tumour was formed beneath the gluteus maximus by the head of the femur, because the latter was directed forwards. The capsular ligaments were greatly thickened, and were more like fibro-cartilages than ordinary ligaments. There was no perforation of the ligaments on either side, but they were equally thick, dense, and hypertrophic. The attachments of the ligaments to the capsules were normal, but the acetabulum was dragged into an abnormal position. The true acetabulum was filled with fat. The seat of the new articulation was above and behind, but there was no bone exposed. No socket was formed in the bone, its formation being prevented by the interposition of the capsule. On the right side the ligamentum teres was found to be represented by a curious leaf-like structure continuous with the cartilage, and having no connexion with the acetabular cavity. On the opposite side destruction of the ligamentum teres had proceeded to a less extent, and they had the ligamentum in its

normal place, and attached in the normal way, but reduced to a mere shred. These facts explained many recorded cases in which the ligamentum teres was said to be altogether absent. In each case of the kind the extent to which the ligamentum teres underwent absorption was simply a question of time. Had the girl lived a few years longer the ligament would have appeared to be entirely absent, and the dislocation attributed probably to its absence. In the majority of cases it was present, but undergoing absorption. The other specimen was one which he had himself dissected, and it repeated all the phenomena of that of the case from Sir P. Dun's Hospital, including the projection of the anterior superior spine and the approximation of it to the tuber ischii, while the crista ilii stood up close to each other. The last feature of the deformity was continued through the whole series. The specimen he now showed of a bone without the pelvis to which it had belonged could be diagnosed by anyone as a congenital dislocation. When he dissected the specimen many years ago he found no sign of morbus coxæ, nor traces of abscesses, adhesion or perforation of the capsule. The axis of the head and neck of the femur had rotated about a quarter of a circle. He noticed the extreme density of the structures forming the new capsules. In a paper read at the Copenhagen Congress the author stated the best time for performing an operation in such cases was when the individual had reached puberty. That would be when all the secondary deformities had developed to the utmost. He believed the only chance of remedy depended on an early and exact diagnosis. The present specimen proved there was no tendency to either aversion or adduction of the limbs.

Dr. Barton asked what was Dr. Bennett's theory of the cause of the wearing away of the ligamentum teres?

Mr. Foy observed that the majority of text writers stated that the head and neck of the femur rotated in the direction of the internal condyle, but that that did not occur in congenital dislocation. In the present case the question was whether the rotation had occurred in intra-uterine life or afterwards.

Dr. Frazer asked was the approximation of the ilia a part of the original congenital affection, or was it a secondary result caused by muscular action?

Mr. W. Stoker said Professor Smith attributed the absence of inversion to the weakening of the front of the capsule, or the want of that part of it which developed into an ilio-femoral band.

Dr. Bennett, in reply, said the specimen showed the ligamentum teres in a transition state. He regarded the change as an example of atrophy through pressure. He believed the changes adverted to by Dr. Frazer were the result of muscular action under abnormal conditions. In his specimens there was no defect in the capsules. Professor

Smith had accepted Hutton's explanation that the position was a gradually assumed one, and that the absence of inversion and of any posterior tumour resulted from the head and neck of the femur being directed forwards instead of backwards. Cruveilhier's plates corresponded.

Lympho-Sarcoma in the Neck.

Mr. Kilgarriff exhibited a large cervical tumour, removed by him from a young woman, aged twenty-five. A similar growth had been removed from the same place six years before. It implicated the lower part of the ear, the face and the ramus of the jaw, the side of the neck, overlapping the clavicle, and lying on the sheath of the carotid, and deeply embedded in the parotid region. It became ulcerated six months before operation, and she became much reduced by the hæmorrhage from the ulcer. Photographs were shown of the patient before and after the operation, which proved very successful. Mr. Coppinger, having examined the growth, reported that it was encapsuled, and that the fresh section showed large translucent areas. Microscopically, the sections presented the characters of myxomatous tissue. The outer parts were chiefly made up of lymphoid tissue. He considered it a lympho-sarcoma.

Mr. Coppinger said the microscopic examination showed the specimen to be a sarcoma which had undergone myxomatous change, to which its non-vascularity was due.

Epithelioma of the Great Toe.

Mr. Kilgarriff also showed a great toe, removed for epithelioma of the matrix of the nail from a man, aged sixty-two. It appeared two years ago. It had a villous appearance.

Mr. Coppinger observed that the cells were of smaller size than were usually met in epithelioma of the lower limbs, and there was less vascularity than usual. The history of the case pointed to a slow growth, which, after existing in the toe a long time, became ultimately malignant.

Large Gall-stones.

Dr. J. W. Moore exhibited some large gall-stones. In 1882 he had presented to the Pathological Society a series of gall-stones, which had been passed by an elderly woman after terrible suffering. A peculiar feature of the case was that there was very little icterus—explained, probably, by the remarkable facetting of the calculi. The calculi had been in the possession of Dr. Frederick Hone Moore, of Anstie, Leicestershire, since last summer. The woman had perfectly recovered. There was an absence of jaundice, accounted for by the number and peculiar facetation of the calculi. Mr. Abraham had reported on the specimens.

The PRESIDENT said the great size of the calculi raised the question whether they entered the intestines *per vias naturales*, or through some abnormal communication between the gall-bladder into the duodenum.

DR. FRAZER suggested they came through ulcerations in the gall-bladder. The statement in the books, that cholesterin was a fat lighter than water, was erroneous. He took some from a gall-bladder, and it sunk in distilled water. The facetting was supposed to be produced by friction between the stones, but it really resulted from their motion whilst aggregating. In one case the stone had been broken, and became covered with fresh materials. In all the cases he had seen that showed facetting, the biliary matter was interlaced with cholesterin. In a case where gall-stones were expelled through one of the ducts, an immense quantity of bile in a state of putrefaction was liberated, and the patient, a gentleman now alive and well, had immediate relief.

Obstruction of the Colon.

DR. BARTON exhibited a specimen of bowel obstruction. The patient, an engine-fitter, aged thirty-four, had suffered occasionally during six months from derangement of the digestive organs. He had no history of dyspeptic symptoms, but complained last summer of colicky pains after food—a peculiar pain across the abdomen, with a sort of gurgling. These symptoms occurred at irregular periods, and in the interval he had good health. On Christmas Eve he had a severe attack of abdominal pain and obstinate constipation. For ten days he suffered from these symptoms, with partial obstruction, swollen abdomen, and peristalsis of the intestines, perceptible through the abdominal walls. He had occasional action of the bowels, produced by enemata, in which the excreta were of a soft character. Admitted into the Adelaide Hospital on the 5th inst., his abdomen was swollen, the chief point of pain being on the right side over the cæcum. Pressure on the rest of the abdomen did not cause much pain. He appeared like a person suffering from strangulated hernia. He had a long, drawn face, and vomited what was of a distinctly fæcal character. It was concluded he had intussusception of the ileum into the large intestine at the ileo-cæcal valve. The swelling had increased to such an extent as to account for the total obstruction which existed for three days. He was put under opiate treatment. Having come prepared to operate, he found the patient had free action of the bowels, which was followed by a second motion after his arrival, the fæcal matter being soft and fluid, evidently from the small intestine. The abdominal swelling and pain had diminished, and the vomiting ceased, although he could not retain food. For the next five days the treatment was on the supposition of inflammatory obstruction—not an intussusception. He gained ground till three days ago, when the pain and vomiting returned; and treatment availing nothing, it was determined to operate. Opening the abdomen

as a tentative measure to ascertain the pathological conditions, he made an incision from the umbilicus downwards, and found that the parts about the cæcal valve were not obstructed. The ileum was thickened, and the cæcum enormously distended, but there was no intussusception. At the transverse colon he discovered a hard mass, with a hard band of lymph around it, about as thick as his little finger, and he divided it. Immediate relief followed. This was only part of the diseased mass, and he excised portion of the tranverse colon, and sewed the cut end of the ascending colon to the upper end of the wound, the rest of which he fastened up, so that the man, who was still alive, had got a false anus. The operation occupied two hours. Whether the man would survive or not was doubtful, the shock having been very great. The wall of the intestine was occupied by a mass which nearly filled the cavity, leaving passage barely for a quill pen. The fizzing noise which attended his temporary relief from pain and obstruction months back, was evidently caused by the passing of the liquid fæces through this opening. The obstruction was of the inflammatory kind, though the mass was exceedingly hard. It grated under the knife, and seemed of a fibrous character. The condition of the ileo-cæcal valve was that of inflammatory thickening.

The PRESIDENT relied on the fizzing noise as distinguishing between fermentative dyspepsia and malignant disease of the pylorus. He had heard, with a stethoscope, a stomach force its contents through a restricted pylorus.

MR. WARREN said when he examined the man he thought he had inflammation of the cæcum. His urine was analysed for indican, which was found to be slightly in excess.

MR. DOYLE had a case in which he inserted his arm up a man's rectum, and detected an obstruction connected with the colon. Such an examination was more easily made of the female than of the male. He had detected intussusception in children with his fingers.

DR. BARTON, in reply, said he had made an examination *per rectum*, with a long tube, which did not reach the obstruction. No mode of examination should be neglected.

The Section adjourned.

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

SESSION 1884–85.

President—JOHN FAGAN, F.R.C.S.I.
Hon. Secretary—WILLIAM G. MACKENZIE, F.R.C.S. Ed.

Thursday, February 5, 1885.

The PRESIDENT in the chair.

The Causation and Treatment of Scarlatina.

DR. WHITLA read a paper on the above subject. [It will be found at page 177.]

PROFESSOR DILL said:—Mr. President and Gentlemen,—After having listened, and that with so much interest, to the very able, clear, and comprehensive statement to which we have been treated by Dr. Whitla, when introducing the subject for discussion to-night, I should have been more pleased to remain silent had he not, in the progress of his remarks, said that he expected I should deal with the disease (scarlatina) in its puerperal condition.

But Dr. Whitla's *tools* come to him so naturally, and he uses them so dexterously, and drawing, as he does, with such facilities upon his resources, he has built up such an admirable structure, proving himself to be such a finished workman, that, however worthy of imitation, it is difficult to follow.

But if you will bear with me, although not perfectly in order, I shall try and remove some of those errors with which the condition, the progress, and the termination of this very complicated and serious disease have been often associated and surrounded.

I need not say that I agree with almost all that Dr. Whitla has given expression to regarding the causation of scarlatina. But whether this disease comes, as it does, in periodic waves, or whether it comes from far or near, or by immediate contact, some more practical points of interest and of inquiry to-night might be stated thus:—1st. Does scarlatina attack every person at one time or another? 2nd. And if so, is the person liable to take the disease a second time? 3rd. What are the means at our disposal to prevent or mitigate the ravages of this disease?

In the first place, to a better understanding of our subject, I would beg to direct your attention to the fact that scarlatina naturally divides itself into stages, so that, dividing it in this light, we have the primary stage, which, if you will, may be said to include the period of incubation, and the fever, which may continue for one, two, or more days.

Then we have the secondary stage, in which the specific poison is developing itself in the peculiar eruption, and which may be accompanied or followed by sore throat.

Then we have the tertiary stage, when the action of the poison may be discovered in the affection of the kidneys, an extension of the sore throat to the ears, and in the accompanying dropsy.

It will be thus seen that the tertiary stage is made to include some of the affections usually placed in the list of sequelæ of scarlet fever; but while I do so associate them with the tertiary stage, I have often seen affection of the kidneys with dropsy appear as the first symptom indicative of the poison of scarlet fever being in the system. In other words, I have often seen persons who had been exposed to the infection of scarlatina, exhibit no symptom of the disease until seized with nephritis, albuminuria, and anasarca.

I believe that few, if any, persons escape this disease, and the reason for it being entertained that many do escape the disease altogether is founded on a fallacy—viz., it appears in so many mild forms at times as not to be noticed or recognised; but it is recognised even in the mildest form when found within the range of infection.

Before proceeding further, I shall just enumerate what I have seen, and what should come under the head of sequelæ of scarlatina—(1) desquamation, (2) loss of hair, (3) loss of nails, (4) loss of joints of fingers, (5) loss of arm and forearm, (6) loss of eyelids, loss of ears, (7) loss of lips, (8) loss of tongue. I have also seen inflammation of the skin all over the body, and that of a very troublesome and protracted character, follow upon scarlatina.

During the present epidemic I had an opportunity of following the disease as it passed over a large family, in a great many different forms and varieties. Not one of the seven children escaped. The parents, domestics, and nurse came also in each for his or her form of it. The mother, who had scarlatina when a girl, and therefore was supposed to be tolerably safe from the infection, watched over and attended to her children. Towards the close of their illness, she being pregnant, and having reached the term of gestation, took ill in labour. I attended her, and she was delivered of a male child, after a protracted labour, when it was seen by all to be covered with the eruption of scarlatina. This I looked upon as rather peculiar, as the mother up to this time had no appearance, not even the slightest trace, of the disease.

I left her that day (Sunday) as well, if not better, than I had ever left a woman after her confinement. She continued to go on in a most satisfactory way until Wednesday, the fourth day after her confinement. On that day she was seized with the severest rigor I have ever witnessed. The rigor returned the next day with equal severity. The pulse had risen to 130, and again to 140, as had also the temperature to

105° on Wednesday, and to 107·2° Fahr. on Thursday. The lochia became scanty, altered in appearance, and offensive. But as my object is not the relation of a case of puerperal scarlatina, I do not therefore detain you with the details, but will content myself by saying the symptoms yielded to large and frequently-repeated doses of sulphate of quinine, sedatives at bedtime, enemata, and the free use of antiseptics.

Although this lady had the disease very severely in her youth, yet here we find her passing through a second well-marked attack of it, and giving birth to a child suffering from scarlatina three days before it appeared upon herself.

And now, Mr. President, as I know I have detained you too long already, while I might say more, I shall sit down, after answering the question just put to me by Dr. Wales—viz.: Was the case of the lady after her confinement not one of puerperal fever? to which I answer no; and for a very good reason—the attack came by being directly communicated by scarlatina, which was about her in the house, and her symptoms were those of that disease.

I may add that I do not believe that the poison which is communicated by scarlatina, or by erysipelas, or by any form of septic poison can propagate true puerperal fever, as I believe true puerperal fever depends upon, and is propagated by, a specific poison.

Dr. Kevin said:—Dr. Whitla had exhausted the whole subject of the causation of scarlatina, and his paper was a valuable contribution to the literature of the subject. He was surprised at the remarkably few deaths which occurred in the Royal Hospital, but considered it was owing to the large number of adults treated there, his experience of the disease showing him that the disease is much more likely to be fatal in very young children.

He believed that the disease never arose *de novo*; that if we could not trace the origin of the poison that it was owing to the many methods by which it might be carried; that a seemingly harmless sore throat in one member of a family was often followed by an outbreak of scarlatina; and the disease was brought at first to these countries from Arabia.

He did not believe in a specific for this affection, but treated the throat symptoms, even in mild cases, with Condy's fluid, brushed over the parts, and, if the nasal passages were affected, syringed twice daily with a weak solution of the permanganate. He had great faith in a mixture containing bromide of potassium, tinct. ferri perchlorid., aconite, and glycerine. It removed that constant desire to clear the throat. It had a sedative action over the nervous and vascular system. He had good grounds for coming to the conclusion that it, in some cases at least, prevented the onset of Bright's disease of the kidneys, and even in that affection he would still continue the mixture.

[*To be concluded.*]

CONNEXION OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND WITH THE ARMY MEDICAL STAFF.

By Surgeon-Major Albert A. Gore, M.D., F.R.C.S.I., Medical Staff.

At the date when the College received its Royal Charter of Incorporation, there were residing and practising in Dublin forty-four physicians and sixty-eight surgeons. The army numbered nominally 12,000 men, but was seldom recruited to its full standard. The barracks as well as the hospitals attached to them had been allowed to fall into decay by the Irish Government, and the sick were accommodated in such hired houses as the regimental surgeons could obtain. Its medical concerns were supervised by these officers solely under the immediate control of their respective commanding officers. The Surgeon-General and Physician-General resided in the metropolis, and were only connected with the army through the King's Royal Military Infirmary, then situated in James'-street, where Manders' brewery afterwards stood. The frontage and gate of this old building, founded in 1728, still exists with the military arms let in over the archway. This old military hospital was for the relief and care of sick and wounded soldiers, and was supervised by ten commissioners, including the Surgeon-General and Physician-General for the time being, and had a resident-surgeon and apothecary. Two years before the College received its Charter, Sir Nathaniel Barry, Bart., M.D., was Physician-General—he resided at 8 Leinster-street; and Mr. William Ruxton, Chirurgeon-General—he lived at 4 Hoey's-court. The regimental surgeons and mates were described as being "very generally young and uninformed," and, owing to the want of any central control, were left to their own devices, "without medical advice in the most critical and alarming circumstances of contagious diseases," then very prevalent in Ireland. They furnished no medical returns, the monthly reports of the sick from commanding officers of regiments to the commander-in-chief stating only the gross number of soldiers unfit for duty, without a specification of particular diseases or any medical detail, and were, therefore, of little practical utility to the service, and there was no special examination for the rank of surgeon or surgeon's mate.

Surgeons of regiments received the Irish establishment commuted allowance of £175 per annum in full, in lieu of all medical and hospital expenses, and were amenable to no other authority except that of their commanding officers. It was then the usual custom to allow the soldiers suffering from venereal and other chronic complaints to sleep two in a

bed, single beds being reserved for cases of acute disease, which occurred in about the proportion of one in six in well-selected summer encampments. The regimental surgeon received the munificent sum of 4s. a day, with 3s. for subsistence; his mate, 2s. 6d. a day, with 2s. for subsistence, the former ranking with lieutenants when not holding a second or military commission, then very common, and granted by his Majesty to medical officers, in order to increase their very inadequate medical allowances.

The sanitary condition of the army in Dublin and country quarters was so indifferent that overcrowding, want of proper ventilation, indifferent food, unsuitable shelter, bad clothing, and want of proper personal cleanliness, with the retention of old and worn-out soldiers in the ranks, and no means of separating men suffering from contagious diseases from the healthy when ill, led to a great loss of life from infective fevers and dysentery, and much inefficiency from itch and venereal diseases.

The first great reform in this halcyon state of affairs was the introduction of the special examination for the appointment of regimental surgeon and surgeon's mate, by the new Royal College of Surgeons in 1784, at which date Mr. Stewart had succeeded Mr. Ruxton as Surgeon-General, and Drs. Charles Quinn and William Harvey, Sir Nathaniel Barry, as "Joint Physicians-General." The office being now divided, gentlemen aspiring for military medical appointments were, on applying for them or on upon being nominated by their respective colonels, ordered before the Court of College Examiners by his Grace the Lord Lieutenant, "in order to be examined as to their qualifications to serve." This secured the formation of the Army Medical Board in Ireland in 1795, which owed its introduction to the joint recommendation of General Cunningham, then Commander-in-Chief of the Irish Forces, and the Right Hon. Thomas Pelham, Secretary to the Lord Lieutenant, both of whom ever continued to take a marked personal interest in its efficiency and working. Up to the date of its formation, 127 candidates for military appointments had been examined by the Royal College of Surgeons—the immediate cause of its formation being the encampment of a considerable portion of the Irish army in the summer of 1795, when it was considered necessary by the Irish Government that steps should be taken at once for forming a medical staff. A letter was accordingly addressed by command of his Excellency, Viscount Camden, to Dr. Charles Quinn, Senior Physician-General, and communicated by him to Dr. William Harvey, Mr. Stewart, and George Renny, Esquire, Surgeon of the Royal Hospital and Military Provost, requesting that a "Medical Board of Control," should be established as in England, Mr. Renny to be appointed Director-General of Hospitals, his special duty being to visit the different encampments as often as occasion might require, and carry into effect

those orders and regulations which, as member of the Board, he had assisted in forming.

Mr. Renny was peculiarly fitted for this duty, as he had joined the 67th regiment as surgeon's mate in June, 1775, and had become surgeon of the regiment in January, 1780, and previous to its departure for the East Indies in 1785, had been appointed Surgeon to the Military Provost in the Royal Barracks, and Surgeon to the Royal Hospital, after twenty years' continuous military service. Both he and Mr. Stewart were past Examiners of the Royal College of Surgeons and Members of its Court of Examiners.

The number of physicians and surgeons of the new medical staff was to depend upon the number of encampments and their extent. The Board about to be formed was, by order of his Excellency the Lord Lieutenant, to have the superintendence of all hospitals, general as well as regimental; and the surgeons of each were regularly to report, weekly or monthly, so that not only the numbers of sick but the nature of the disorders might be known, and the Board be able to anticipate any epidemic distempers or camp fever which might be expected in the young regiments that were in the country upon taking the field, and it was to perform its duty under the direction of the Commander-in-Chief in Ireland.

In compliance with these instructions the Irish Army Medical Board was formed on 1st June, 1795, and was directed immediately by General Cunningham to issue such orders and instructions to the commanding officers and surgeons in the establishment as were necessary for carrying out his Excellency's desires, as notified in their appointment. They shortly submitted for the approval of his Excellency the Lord Lieutenant a short set of rules, a principal feature of which was a frequent use of accurate system of reports, by which means they were enabled with facility to control and direct the whole of the medical and surgical business of the Irish army, which being approved of, the first edition of "The Army Medical Regulations of Ireland" was published in 1795, which applied equally to the line, militia, and fencible service. His Majesty's Royal Warrant, dated St. James, 1st June, 1797, having made a considerable change in the situation of surgeons and assistant-surgeons of the line, a second edition of these Regulations was published in 1798, a third in 1803, a fourth in 1806, and the last in 1813 with an appendix and index.

The first edition of this work anticipated by three years the "Regulations for Regimental Hospitals," published by authority in England in 1798. To the Royal College of Surgeons and the King and Queen's College of Physicians, through their joint representatives, was thus due the publication of a series of admirable practical rules, which influenced for many years in Ireland the sanitary, medical, surgical, and financial concerns of its military hospitals.

The meetings of the Army Medical Board were at first held in the

King's Royal Military Infirmary, Phœnix Park, which had been completed in 1788, at a cost of £9,000, in addition to which the upper story of Steevens' Hospital had been rented, at £500 per annum, for some years after. The Board met subsequently at 6 Parliament-street, next door to Mr. Reed's, the surgical instrument makers, which for several years was the office of the Irish Army Medical Staff.

The following gentlemen, members of their respective colleges, were recommended for appointments "as especially well qualified, from their professional abilities and experience, to fill the stations of Staff Hospital Physicians and Surgeons," viz. :—

Doctor James Cleghorne, 6 Eustace-street.
„ Thomas Egan.
„ Francis Hopkins, 53 Stephen-street.
„ William O'Dwyer.

} As Staff Physicians, on the lowest English allowance of 20s. per day with half pay.

Messrs. Ralph Smith O'Bree, 8 Abbey-street.
Francis M'Evoy, 13 Abbey-street.
Clement Archer, 15 St. Andrew-street.
Wm. Moore Peile.

} As Staff Surgeons, on 10s. per day with half pay.

Doctor John Haig to be permanently stationed at Cork, where a general hospital had been formed in 1791, upon the recommendation of General Dundas, for sick unavoidably left behind upon the embarkation of their regiments for war or foreign service. Apothecaries, purveyors, and hospital mates to be brought forward as required.

At the close of 1797, two and a half years after its formation, the medical staff of Ireland was constituted as follows :—

Medical Board :—

Dr. C. W. Quinn,
Dr. W. Harvey,
} Joint Physician-Generals.
George Stewart, Esq., Surgeon-General.
George Renny, Esq., Director-General of Hospitals.

Staff Physician.—Dr. John Haig.

Staff Surgeons.—Ralph Smith O'Bree, Clement Archer, R. Moore Peile, Wm. Comins, Huson Bigger, Robert Hamilton, M. Poole, A. Everard, A. Graydon.

Staff Hospital Mates.—Samuel Banks, Edward Purdon, Joseph Stringer, Robert Magee, John O'Donnell, J. S. Thwaites, Henry Reed, Henry Irvine, Edward Ashe, John Hume, Joseph Power, William Strass.

Apothecaries.—John Cowan, Edward O'Brien.

Secretary.—E. Berkeley Hippax, Esq.

Under the immediate superintendence of the Board were—9 regiments of regular and 7 of fencible cavalry, 8 regiments of regular and 22 of

fencible infantry, and 38 regiments of militia—a total force of 42,200 men, to which were added, in the following year, some 20,000 yeomanry. In addition, were several general hospitals attached to the summer encampments.

During the short interval, from its formation in 1795, many great and lasting reforms were introduced and carried out by the able men who formed the Medical Board and the staff of medical officers selected for appointments. Among the more important of those were the statistical returns of diseases and the periodical reports to head-quarters, the first of their kind in the British army. The formation of well-equipped general hospitals, with flying ambulances and field hospitals, systematic arrangements for the segregation of the sick suffering from contagious diseases, and better sanitary arrangements for their prevention; improvements in the barracks and housing of the troops, and the substitution of regimental infirmaries in each barrack for hired houses, and medicine chests from the Apothecaries' Hall, as well as surgical instruments to regimental surgeons in lieu of the inefficient commuted allowance; stricter regulations for the attendance of militia surgeons with their corps and their examination by the College Professors prior to appointment; a greatly improved scale of hospital equipments in the entire charge of the Director-General, and many minor changes which added much to the efficiency of the Irish army and comfort and better treatment of its sick. That this was the case is amply proved by the following flattering encomium, received from the Irish Executive at the close of 1797, viz.:—

"Dublin Castle, 23rd November, 1797.

"Gentlemen,—His Excellency has read with peculiar satisfaction the last report from your Board, and, concurring in opinion with you respecting the merits of the staff surgeons at the different hospitals, desires that you will communicate to them his entire approbation of the diligence and attention with which they have discharged their duty. His Excellency has at the same time commanded me to say that, without diminution of the merit which is due to the staff surgeons, he cannot help considering that the success of this important department of the military establishment is to be attributed to the judicious regulations and to the unremitting zeal and assiduity of your Board, and his Excellency confides in a continuance of these exertions.

"I have great pleasure in communicating his Excellency's command, having personally observed the great advantage of your superintendence in the different hospitals I have visited in the South of Ireland.

"I have the honour to be, gentlemen,

"Your most obedient humble servant,

"T. Pelham.

"The Medical Board."

A few months after the formation of the Board, General Cunningham was directed to express the thanks of his Royal Highness Field-Marshal the Duke of York, for the first returns of the sick of the army in Ireland forwarded to him, and also that he considered the forms "so well adapted to the purpose for which they were intended," that the Army Medical Board in England had been ordered to adopt them. It was afterwards ordered that three copies of their monthly reports on the health of the army in Ireland should be forwarded—viz., one for his Excellency the Lord Lieutenant, a second for the Commander-in-Chief, and a third for his Majesty—a practice continued for many years, during which period the able officers who administered the concerns of the Army Medical Department in Ireland received the constant support and approval of succeeding commanders and governments.

The form of appointment to the medical staff in Ireland, at this date, is shown in the following warrant :—

"Medical Board Room, Oct. 26th, 1796.

"Sir,—We have to acquaint you that you were this day appointed Hospital Mate to the Forces in this kingdom.

"You will receive an immediate douceur of twenty guineas, and seven shillings and sixpence per day, pay to commence from the date of this letter.

"And you are forthwith to repair to head-quarters in the southern district, there to receive the special orders of the Physician-General, Director-General, or Hospital Staff.

"C. W. Quinn,
"W. Harvey,
"Geo. Stewart,
"Geo. Renny.
"C. B. Hippax, Secretary.

"To Mr. Robert Hamilton, Hospital Mate."

The French, under General Hoche, had then threatened a descent upon Ireland, and a large body of troops had been collected in the South of Ireland to oppose their landing. Clonmel was the "Central Hospital Depot." The new General Hospitals had been opened at Belfast, Kilkenny, Bandon, New Geneva, Duncannon, Waterford, Kilcullen (for the Curragh), Limerick, Phœnix Park, Athlone, Cork, Fermoy, Clonmel, and Drogheda. The twenty spring-carts used for ambulance purposes, and designed by the Director-General, were in use in Ireland contemporaneously with those introduced into the French service by Baron Larrey.

In 1795 an Act had passed the Irish Parliament by which it was enacted that the pay of militia surgeons should be made permanent, and that previous to the 11th of November every militia surgeon should be

qualified in the same manner as surgeons of the Regular Forces—*i.e.*, by obtaining a certificate from the Examiners of the Royal College of Surgeons, and if unable to pass the examination, to dispose of their commissions to qualified persons.

In this short sketch it would be impossible to delay further in following the most interesting history of the Irish Army Medical Staff, and of the army with which it was so intimately connected. In 1813, towards the close of the great struggle on the Continent, when Ireland was largely the recruiting ground for those hardy soldiers who fought so bravely under the British flag in every quarter of the globe, it was distributed as follows:—

Districts and Stations of the Hospital Staff of Ireland.

LEINSTER DISTRICT.

Deputy Inspector Peile. Residence, Dublin.

Staff Surgeon O'Bree. Residence, Dublin:—Dublin Garrison, Chapelizod, Drogheda.

Staff Surgeon Banks. Residence, Naas:—Naas, Trim, Carlow, Baltinglass, Kilcullen, Arklow.

Staff Assistant Pack, Kilkenny:—Kilkenny.

CONNAUGHT DISTRICT.

Deputy Inspector Pitcairn, M.D. Residence, Athlone.

Staff Surgeon Crofton. Residence, Athlone:—Athlone, Roscommon, Ballinasloe.

Staff Surgeon Stringer. Residence, Birr:—Birr, Banagher, Roscrea, Templemore, Clonoony.

Staff Surgeon Graydon. Residence, Limerick:—Limerick, Ennis, Nenagh, Rathkeale, Killarney.

Staff Surgeon Whistler, M.D. Residence, Galway:—Galway, Gort, Loughrea, Tuam, Castlebar, Ballina, Ballinrobe.

Staff Surgeon O'Connor, M.D. Residence, Tullamore:—Tullamore, Mullingar, Longford, Phillipstown, Kilbeggan.

ULSTER DISTRICT.

Deputy Inspector Comins—Residence, Belfast.

Staff Surgeon Purdon. Residence, Belfast:—Belfast, Antrim, Coleraine, Killough, Newry.

Staff Surgeon Rawling. Residence, Strabane:—Strabane, Lifford, Omagh, Londonderry.

Staff Surgeon Ormsby. Residence, Sligo:—Sligo, Ballyshannon, Boyle, Enniskillen.

Staff Surgeon Dalzell. Residence, Armagh:—Armagh, Dundalk, Cavan, Belturbet, Aughnacloy.

MUNSTER DISTRICT.

Deputy Inspector Bigger, M.D. Residence, Cork.

Staff Surgeon Rodgers. Residence, Cork:—Cork, Middleton, Kinsale, Fermoy, Charlesfort, Mallow, Bandon, Cove of Cork, Bantry.

Staff Surgeon Eagle, M.D. Residence, Clonmel:—Clonmel, Cashel, Cahir.

Staff Surgeon Poole, M.D. Residence, Waterford:—Waterford, New Geneva, Youghal, Wexford, Newtownbarry.

During the twelve years ending 1816 the contingent charges on each regiment in Ireland averaged £88 10s. per annum, the entire of which had been liquidated by the savings in the general and regimental hospitals under the superintendence of the Board. These savings amounted to £81,339 12s. 9½d.

The leading spirit of the Medical Board, Dr. Renny, retired from the office of Director-General of Hospitals in 1847, after an unprecedented service as a medical officer of seventy-two years, on full pay, and in the active performance of his important duties, forty-nine of which was in the office of Director-General of Hospitals. The principal events in his life were the inauguration of the Medical Staff; the formation of general hospitals in Ireland; the medical arrangements in view of the French invasion and during the troublous times in 1798; the recommendations for the erection of the various hospitals now attached to the different barracks in Ireland; the improvement in the military provost stations, and the substitution of separate confinement for the more degrading corporal punishment of the day. Dr. Renny was also largely connected with the arrangements in the erection of the lunatic asylums in the different counties, and was one of the members of the "Board of Controul" placed over them. Previous to his retirement he was presented with an address and handsome testimonial from the medical officers of the command, and the following general order was issued, in testimony of the esteem in which he was held:—

"*General Order.*

"Adjutant-General's Office,
"Dublin, July 27*th*, 1847.

"The Lieutenant-General commanding, in announcing to the troops serving in Ireland the retirement of Dr. Renny, Director-General of Hospitals, feels that he would be wanting in what was due to an old and meritorious officer, were he to permit Dr. Renny to relinquish his important office—one which he has filled for more than half a century with so much advantage to the public interest—without placing on record the high sense he entertains of his valuable services, and of the Lieutenant-

General's unqualified approbation of his conduct during the long period he has been under his more immediate command.

"By order of the Lieutenant-General commanding.

"W. COCHRANE.

"*Deputy Adjutant-General.*"

He died in November of the following year, and was buried in the Royal Hospital, where he had resided from the date of his appointment in 1784. He was succeeded by Sir James Pitcairn, Local Inspector-General of Hospitals, who retired on the 24th August, 1852, and was succeeded by Deputy Inspector-General, afterwards Sir Charles Maclean, the last Local Inspector-General of Hospitals in Ireland.

On the death of Dr. Quinn, the office of Joint Physician-General merged with that of "Physician-General to the Forces." Dr. Cheyne succeeded Dr. Harvey, and Sir Philip Crampton, Bart., Mr. Stewart, the Surgeon-General. On the death of these officers both offices ceased to exist, and with them the old Army Medical Board of Ireland, which, with its officers, had been recruited from among the *élite* of the profession in this country, and conferred upon the soldier innumerable benefits.

The "General Hospital Staff" of Ireland ranked first among the civil departments on that establishment, and wore the following uniform, in 1816:—

Coat.—Scarlet, according to the uniform established in the respective situations, without epaulettes.

Hat.—Cocked, plain, black button, and black silk loop; no feather.

Breeches.—White, and long boots, or
Pantaloons.—White, with Hessian boots } Dress.

Overalls.—Blue or gray . . . . Undress.

Sword (to be worn under the coat) and
Knot.—The same as established for the officers of infantry.

Cravat or *Stock.*—Black silk.

Gloves.—White leather.

Great Coat, blue or grey.

In full dress, white kerseymere breeches, silk stockings, shoes, and gilt buckles.

RICE AS A STYPTIC.

POWDERED rice as a styptic remedy has a great effect on fresh wounds, much superior to oxide of zinc. By mixing from 4 to 11 per cent. of it with lint, and using the lint thus treated as a compress, it is very effectual and more valuable than subnitrate of bismuth, salicylic acid, or carbolic acid.—*Rundschau*, and *Exchange.*

CLINICAL RECORDS.

Sir Patrick Dun's Hospital.—*Scrofulous Pyelo-nephritis.* Under the care of J. Magee Finny, M.D., Dubl., Clinical Physician.

[From Notes by Mr Thos. Lyndon.]

M. E., aged nineteen, was admitted into Sir Patrick Dun's Hospital, Jan. 9th, 1884. The family history is bad, for, although her parents are both alive and well, one sister died of consumption, and another was suffering at the time of her admission from that disease. The patient herself presents, in addition to those due to anæmia, many of the features so often met with in phthisical individuals—such as a clear, transparent, delicate skin, pink cheeks, thick lips, long and curved eyelashes, and fine china-like teeth.

She states she had enjoyed good health up to three years ago, when she was attacked with pain in the back and frequent desire to pass water. During the first few days the urine contained blood. About seven months ago her monthly changes ceased, and have not since returned. Four months ago her feet and legs were swollen, and she was admitted into a Dublin hospital. As she suffered from amenorrhœa, and a swelling had been noticed in the abdomen, she was advised to enter the Rotunda, under Dr. Macan. The true nature of her complaint was at once recognised, and Dr. Finny was asked to watch its further progress in Sir P. Dun's Hospital.

In addition to the pearly colour of the sclerotics and general anæmia, as evidenced by pallor of the mucous membranes, and by a loud venous hum in the neck, there was a constantly quickened pulse, varying from 96 to 116, and subfebrile range of temperature, 100°–102·5°. The tongue was indented and coated, and the stomach was irritable, appetite being impaired, and any indiscretion in diet bringing on gastric pain and vomiting.

On examination of the abdomen, a tumour—the size, shape, and in the position of the left kidney—was readily made out by palpation and percussion. It occupied the lumbar region, filled the space between the last rib and crest of the ilium, and extended as far inwards and forwards as within an inch of the umbilicus. It was generally dull on percussion, and painful to pressure—any deep pressure inducing nausea, and various reflected pains along the course of the genito-crural and inguinal nerves. The tumour could be slightly moved by placing the fingers behind and pressing it towards the spine, but it was not altered by change of posture

or deep inspiration. Its surface was smooth, while the descending colon could be felt passing in front of it, at times giving out, on percussion, a dull and a tympanitic note.

The inner border of the tumour was slightly notched, while extending down from it was a cord-like mass, the size of one's index finger, which was painful on pressure, and could be traced into the hypogastrium, over the brim of the pelvis, nearer to the middle line than the colon. From these data it was evident that the left kidney was much enlarged, but uniformly so, as no inequalities on its surface could be detected, and also that the ureter was swollen and thickened, and probably the seat of chronic inflammation.

A similar tumour, but very much smaller, and consequently more difficult to differentiate, was to be made out in the right side, close under the right lobe of the liver. Pressure on either gave pain, which extended downwards towards the bladder. The urine was normal as to total quantity, though it was passed in small quantities and very frequently—sometimes every hour, during both night and day; it was turbid when freshly passed, but on standing became clear, and threw down a whitish sediment, $\frac{1}{16}$–$\frac{1}{20}$ of its volume, which was soluble in liq. potassæ, and consisted of pus. There was slight albuminuria, but not more than could be accounted for by the presence of the pus. Reaction was acid; and 421 grs. of urea were eliminated in 24 hours.

The patient remained in hospital till April 28th, 1884, when, at her own request, she went home. During this time the chief distress was frequent attacks of vomiting and gastric disturbance, which responded generally soon to creasote. It was observed that whenever the urine was remarkably clear and free from purulent deposit the renal tumours, and particularly the left, became larger, pain was complained of both in the lumbar region and the hypogastrium and in the course of the genito-crural and external cutaneous nerves, and the thickened ureter seemed to be especially tender to the touch. It was at these times that the gastric disturbances became pronounced, and whenever the pus appeared in quantity relief was immediately experienced. The right kidney became considerably larger while she was in hospital. During the intermissions of pain the patient was able to get up and walk about the ward, and was carried out to the grounds on fine days; but she always found that sitting forwards induced pain over the bladder and frequent micturition.

During the month of March there was a fear of her right lung becoming seriously engaged; but, although the back of the upper lobe showed signs of consolidation, resolution took place, and the further downward progress of catarrhal pneumonia was averted. My friend, Dr. Boyce, under whose care she had originally been, and who, in the first instance, advised her to go to hospital, told me that, after returning

home, she remained in very much the same state till November, 1884, when she died of exhaustion—her sister in the meantime having died of consumption.

Remarks.—The diagnosis of scrofulous disease of the kidneys and ureters was arrived at on the following grounds :—

1. The family history of constitutional taint.
2. The age, and general cachexia of the patient.
3. The gradual and slow progress of the disease.
4. The constant presence of pus in the urine, whose reaction was always acid, and which was free from ammoniacal decomposition, or the presence of phosphatic deposit.
5. The bilateral affection of the kidneys.
6. The great enlargement of the kidneys, so as to present palpable abdominal tumours. [N.B.—It is more than probable that the increased size of the kidneys was, in part, due to a pyonephrosis.]
7. The constitutional disturbance and the frequent febrile exacerbations.

The treatment was directed to maintaining a fair state of health, by careful dietary and other hygienic means; fomentations, warm baths, and anodynes being occasionally employed when the pain and urinary distress required them.

The question of surgical relief by nephrotomy or nephrectomy was discussed in conjuction with my colleague, Dr. Charles B. Ball, but although it has proved of benefit not only as a palliative remedy in calculous pyelitis and in fluid tumours of the kidney, but also as curative of a *descending* inflammation of the ureter, it was considered *uncalled for* so long as a relatively full quantity of urine was being passed, and *inadvisable* on account of the other kidney being similarly affected.

GLYCERINUM ALUMINIS.

Mr. R. W. Parker suggests a new preparation of alum, which he can strongly recommend after a prolonged trial. It is made by dissolving one ounce of alum in five ounces of glycerine, by means of a gentle heat. This is about four times as strong as a saturated watery solution. It is indicated in all cases where a powerful local astringent is required; and has the advantage over tannin of being far less disagreeable, equally astringent, and quite compatible with an administration of iron. In cases of chronic pharyngitis—so common in children—it is very efficacious; diluted with water, it forms an useful gargle, injection, or lotion.—*Brit. Med. Journal*, Jan. 24, 1885.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, M.D., F.K.Q.C.P., F. R. Met. Soc.

Vital Statistics

Of the Eight Largest Towns in Ireland, for the Week ending Saturday, January 3, 1885.

Towns	Population in 1884	Births Registered	Deaths Registered			Deaths from Seven Zymotic Diseases							Deaths from Phthisis	Death-rate per 1,000	
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa		From all causes	From seven Zymotics
Dublin, -	351,014	242	259	39	55	–	3	11	–	–	7	3	22	38·4	3·6
Belfast, -	216,622	162	131	22	18	-	3	3	2	-	6	5	24	31·4	4·6
Cork, -	80,124	47	70	8	16	–	–	–	–	2	1	1	9	45·4	2·6
Limerick,-	38,562	13	35	1	18	–	–	–	1	–	2	–	3	47·2	4·0
Derry, -	29,162	22	18	4	6	–	–	–	–	–	1	1	2	32·1	3·6
Waterford,	22,457	17	13	2	3	–	1	1	-	–	–	-	–	30·1	4·6
Galway, -	15,471	7	14	1	4	-	–	–	–	–	–	-	–	47·1	0·0
Newry, -	14,808	7	10	3	4	–	–	–	-	–	–	1	1	35·1	3·5

Remarks.

In this week—the 53rd and last of the year 1884—a very high death-rate was registered in several of the principal towns of Ireland; but this was to some extent the result of postponed registration during Christmas.

In the eight selected towns included in the Table the registered deaths are represented by the following rates per 1,000 of the population annually—highest: 47·2 in Limerick, 47·1 in Galway, 45·4 in Cork, and 38·4 in Dublin; lowest: 30·1 in Waterford, 31·4 in Belfast, 32·1 in Derry, and 35·1 in Newry. The rate of mortality from seven chief zymotics ranged from 4·6 per 1,000 per annum in Belfast and Waterford, 4·0 in Limerick, 3·6 in Dublin and Derry, 3·5 in Newry, and 2·6 in Cork to *nil* in Galway.

The recorded deaths represent a rate per 1,000 of the population annually of 25·0 in twenty-eight large English towns (including London, in which the rate was 24·9), 36·0 in the sixteen chief towns of Ireland, 39·1 in Glasgow, but only 18·8 in Edinburgh. If the deaths (numbering 5) of persons admitted into public institutions from localities outside the Dublin Registration District are deducted, the death-rate of that district becomes 37·6, while that within the municipal boundary is 39·6.

Acute febrile zymotics were returned as the cause of death in 26 instances in the Dublin district, compared with an average of 31·7 for the last week of the ten years, 1874–83. The 26 deaths included 3 from measles, 11 from scarlet fever, 7 from "fever" (all cases of typhoid), and 3 from diarrhœal diseases. Of the 11 victims of scarlet fever, 8 were children aged between one and five years.

In the Dublin Registration District 242 births and 259 deaths were registered. The births were those of 113 boys and 129 girls. Among the deaths were included those of 39 infants under one year and of 55 persons aged sixty years or upwards.

The mortality from pulmonary consumption was low for the time of the year—the deaths numbered 61 in the eight chief towns, and of these 24 occurred in Belfast, and 22 in Dublin. In this latter city diseases of the respiratory organs were debited with 71 deaths, compared with a ten years' average of 63·9 in the last week of 1874–83. The deaths included 48 from bronchitis (average = 47·8), and 14 from pneumonia (average = 9·1). Of the 48 victims of bronchitis, 6 were infants under twelve months, while 13 had passed their sixtieth year.

The mean temperature of the week was 40·5° in Dublin, 40·0° in Belfast, 46·0° at Roche's Point, Co. Cork, 32·9° at Glasgow, 34·1° in Edinburgh, and 33·2° at Greenwich. The minimal readings of the thermometer in the screen were 33·7° in Dublin, 35° at Belfast, 40° at Cork, 22° at Glasgow, 27·2° in Edinburgh, and 25·5° at Greenwich.

Vital Statistics

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, January 31, 1885.

Towns	Population in 1885	Births Registered	Deaths Registered			Deaths from Seven Zymotic Diseases							Deaths from Phthisis	Death-rate per 1,000	
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa		From all causes	From seven Zymotics
Dublin, -	353,082	856	877	132	237	–	14	24	4	13	22	9	113	32·4	3·2
Belfast, -	219,222	538	490	98	94	–	3	12	3	7	12	11	74	29·1	2·9
Cork, -	80,124	173	255	23	96	–	2	3	3	4	4	–	29	41·4	2·6
Limerick, -	38,562	89	97	15	33	–	–	–	–	1	1	1	9	32·7	1·0
Derry, -	29,162	71	35	3	10	–	–	2	–	–	1	–	4	15·6	1·4
Waterford,	22,457	44	52	7	11	–	6	–	–	–	2	–	7	30·1	4·6
Galway, -	15,471	27	28	2	12	–	–	–	–	–	1	1	2	23·5	1·7
Newry, -	14,808	30	20	2	6	–	–	–	–	1	–	1	1	17·6	1·8

Remarks.

In the eight selected towns included in the foregoing Table the highest death-rates are 41·4 per 1,000 of the population annually in Cork, 32·7 in Limerick, 32·4 in Dublin, and 30·1 in Waterford; the lowest rates are 15·6 in Derry, 17·6 in Newry, 23·5 in Galway, and 29·1 in Belfast. The rate of mortality from seven chief zymotics ranged from 4·6 per 1,000 per annum in Waterford, 3·2 in Dublin, 2·9 in Belfast, 2·6 in Cork, 1·8 in Newry, 1·7 in Galway, 1·4 in Derry, to 1·0 in Limerick.

The recorded deaths represent a rate per 1,000 of the population annually of 24·4 in twenty-eight large English towns (including London, in which the rate was 24·0), 30·5 in the sixteen chief towns of Ireland, 34·1 in Glasgow, and 23·4 in Edinburgh. There is a decided increase (from 22·2 to 24·4) in the mortality in the English towns generally; and in London it has also risen considerably—from 20·9 to 24·0 per 1,000 per annum. It has fallen slightly in Glasgow (from 34·3 to 34·1); but although still moderate it has risen perceptibly in Edinburgh (from 21·1 to 23·4). In the Irish towns the rate of mortality has risen from 26·7 to 30·5. If the deaths (numbering 24) of persons admitted into public institutions from localities outside the Dublin Registration District are deducted, the death-rate of that district becomes 31·5, while that of the portion of the district included within the municipal boundary is 35·3. In London the epidemic of smallpox displays considerable vitality, for the deaths were 229, compared with 208 in the four weeks ending December 27, 1884. The weekly number of deaths from this disease since that date have been 56, 42, 70, 58, and 59 respectively. The deaths from diarrhœal diseases in the same city, which numbered 34 in the four weeks ending December 27, were 39.

Acute febrile zymotics were returned as the cause of death in 106 instances in the Dublin district, compared with a ten-years' average of 135·8 in the corresponding period. The 106 deaths included 24 from scarlet fever, 22 from "fever," 14 from measles, 13 from whooping-cough, 9 from diarrhœal diseases, and 4 from diphtheria. The epidemic of scarlet fever continues to decline gradually, the deaths being 7 fewer than in the four weeks ending December 27. Of the 24 fatal cases, 10 occurred in the South City Districts, 8 in the North City Districts, 2 in the Kingstown District, 1 in the Donnybrook (Pembroke Township) District, and 2 in that of Rathmines. Of the 22 deaths referred to "fever," 13 were ascribed to enteric fever and 5 to typhus, while in 4 instances the exact nature of the fever was either not specified or was ill-defined. The deaths from fever were 8 more than those registered (14) in the four weeks ending December 27. Fifteen children under five years succumbed to scarlet fever, including only 1 infant of less than twelve months. Eleven of the 13 victims of

whooping-cough were under five years of age, including one infant of less than twelve months old.

Measles caused 14 deaths in Dublin, and 2 in Belfast. In the former city this disease has assumed a decidedly epidemic tendency, the deaths being 6 more than in the four weeks ending December 27.

Scarlet fever was fatal in 12 instances in Belfast, 3 in Cork, and 3 in Derry. Diarrhœal diseases were credited with only 23 deaths in the eight towns. In London the weekly registered deaths from diarrhœal diseases were 11, 8, 8, and 12 respectively.

In the Dublin Registration District 856 births and 877 deaths were registered, compared with 648 births and 824 deaths in the four weeks ending December 27. The births were those of 448 boys and 408 girls. The deaths of infants under one year were 132; those of persons aged 60 years and upwards were 237.

The deaths referred to pulmonary consumption in the eight towns were 239, compared with 229 in the four weeks ending December 27. In Dublin diseases of the respiratory organs are stated to have caused 213 deaths, against an average of 260·3 in the corresponding four weeks of the previous ten years. The 213 deaths included 143 from bronchitis (average = 193·1) and 37 from pneumonia (average = 32·0). Of the 213 persons who succumbed to bronchitis, 22 were infants under twelve months, whereas as many as 55 had passed their sixtieth year.

On Saturday, January 31, 1885, there were under treatment in the principal Dublin hospitals no cases of smallpox, 72 cases of measles, 62 of scarlet fever, 28 of typhus, 21 of enteric fever, and 11 of pneumonia.

The mean temperature of the four weeks was 41·4° in Dublin, 40·3° in Belfast, 43·1° at Roche's Point, Co. Cork, 37·0° at Glasgow, 37·3° in Edinburgh, and 37·2° at Greenwich. The minimal readings of the thermometer in the screen were 29·0° in Dublin, 29° at Belfast, 31° at Cork, 22·0° at Glasgow, 22·0° in Edinburgh, and 22·3° at Greenwich.

The weather was very cold and dull during the first three weeks of the period, exceptionally warm and unsettled during the fourth and last week.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N. Long.* 6° 15′ *W., for the Month of January*, 1885.

Mean Height of Barometer, - - -	29·800 inches.
Maximal Height of Barometer (on 16th, at 9 a.m.),	30·289 ,,
Minimal Height of Barometer (on 31st, at 12 30 p.m.),	28·413 ,,
Mean Dry-bulb Temperature, - - -	41·3°.
Mean Wet-bulb Temperature, - - -	39·3°.
Mean Dew-point Temperature, - - -	36·8°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·221 inch.

Mean Humidity, - - - - -	84·3 per cent.
Highest Temperature in Shade (on 29th), - -	53·7°.
Lowest Temperature in Shade (on 13th), - -	29·0°.
Lowest Temperature on Grass (Radiation) (on 13th),	25·4°.
Mean Amount of Cloud, - - - -	68·2 per cent.
Rainfall (on 23 days), - - - -	1·617 inches.
Greatest Daily Rainfall (on 7th), - - -	·321 inch.
General Directions of Wind, - -	S.S.E., S.E., W.S.W.

Remarks.

A dull month, of average temperature, with a remarkable prevalence of south-easterly winds, densely clouded skies, and a deficient rainfall, scattered, however, over an excess of rainy days. The last few days were warm and very unsettled, with squally southerly winds and frequent showers by night. The mean temperature deduced from daily observations at 9 a.m. and 9 p.m. was 41·3°—a value about equal to the average, but 3·9° below the corresponding mean of January, 1884, which was an unusually mild and frostless month. The mean temperature, calculated by Kaemtz's formula from the daily maxima and minima, was 40·8°, or exactly equal to the average for January, calculated in the same way for the twenty years, 1865–84, inclusive. The arithmetical mean of the daily maximal and minimal temperature was 41·5°. The mean temperature of the month was almost identical with that of December, 1884. The barometrical pressure averaged 29·800 inches, compared with 29·881 inches in the ten years, 1871–80, inclusive. The highest observed reading of the barometer was 30·289 inches at 9 a.m. of the 16th; its lowest observed reading was 28·413 inches at 12 30 p.m. of the 31st. The rainfall amounted to only 1·617 inches, against a twenty years' average of 2·243 inches; but the fall was distributed over as many as 23 days, compared with a similar average of 17·1 rainy days.

New Year's Day was very gloomy and damp, with drizzle in Dublin and a moderate S.S.E. wind. In England it was frosty, with a dry and searching air and variable winds from S.E. to S. The weather of this day was typical of that which held during the greater part of the month.

During the week ending Saturday, the 10th, the south-westerly type of weather became fully established in North Western Europe. Atmospherical pressure remained persistently high over France and Germany, while successive areas of low pressure passed across the Atlantic and Norwegian Sea, along the W. coasts of Ireland, Scotland, and Norway. The weather, more particularly after Wednesday, the 7th, was therefore unsettled and squally, with variable temperature and shifting S. to W. winds, in the countries named; whereas sharp frosts were felt in Eastern France, and from time to time in most parts of England also. On the 10th a very deep depression passed across Ireland in an easterly direction.

"Polar" winds and bleak, wintry weather succeeded. In the rear of the depression of the 10th, strong N. and N.W. winds blew in the British Islands, where the weather was cold and showery. The 13th was frosty, and next day frequent showers of dry hail and some snow fell in and about Dublin. At this time a snowstorm of considerable severity occurred in Norfolk. On the 17th the wind freshened to a moderate gale from E., and at 1 30 p.m. there was a downpour of hail and sleet in Dublin.

The weather of the week from the 18th to the 24th was of a remarkable character. The centre of an anticyclone was found throughout over the S. of Sweden and Denmark; while the barometer was relatively low over the Atlantic to the westward of the British Islands as well as over the Bay of Biscay. No well-marked cyclonic systems, however, appeared within the area of low pressure, so that the weather did not vary much in the anticyclonic and cyclonic districts. On the Continent a steady frost prevailed, accompanied with dry and searching easterly winds. In Great Britain also severe frost was felt from time to time, with much cloud and fog at night and in the mornings. The wind curved round from E. in the south of England to S. in Scotland. Ireland came gradually under the influence of the Atlantic air-current, so that there was no frost after Wednesday, and the atmosphere finally became soft and mild. The sky was, as a rule, densely clouded, and whenever it did clear partially an orange coloration beneath the sun was very perceptible. At Brussels the thermometer registered 12° Fahr. at 8 a.m. of the 20th, and next morning the reading at Nairn, in the N.E. of Scotland, was 11°.

The last week witnessed the complete displacement of the cold air over Western Europe by a warm Atlantic current, which gradually made its way eastwards. Depressions began to travel along the western coasts of Ireland and Scotland in a northerly direction, accompanied by high temperatures and frequent showers. These disturbances culminated on Saturday, the 31st, at 12 30 p.m. of which day the barometer was down to 28·413 inches even in Dublin. On this day lightning was seen after dark, and later in the evening there were lunar rainbows, as successive showers came up from S.W.

In Dublin the following phenomena were observed—a solar halo on the 5th, a lunar halo on the 27th. lunar coronæ on the 26th and 27th; lightning on the 31st, snow or sleet on the 8th, 14th, and 17th; hail on the 14th, 15th, and 17th; more or less fog on the 3rd, 4th, 18th, and 19th; lunar rainbows on the 31st; gales on the 8th, 10th, 17th, 28th, and 31st.

PERISCOPE.

DIAGNOSIS OF PERONEO-TIBIAL SPRAIN.

A CASE recently occurred in the service of M. Labbé, at the Beaujon Hospital, which well illustrated the difficulties sometimes encountered in the diagnosis between sprain at the ankle-joint and fracture of the fibula. There are four traumatic lesions which are usually found in this locality:—(1) Tibio-tarsal sprain, properly so-called, and, perhaps, the most rare; (2) Medio-tarsal sprain—these two varieties are easily distinguished from each other; but great difficulty is sometimes encountered in differentially diagnosticating (3) Peroneo-tibial sprain, or distension of the ligament which unites the tibia with the fibula—from (4) Fracture, with tearing of the external malleolus. In order not to fall into an error which would be decidedly disadvantageous to the patient, it should be noticed that in peroneo-tibial sprain the ecchymosis is seen a little in front of the anterior border of the fibula, while in separation of the external malleolus it is behind the bone, in the depression which separates it from the tendo Achillis. With regard to the pain, in the case of fracture it is seated immediately over the bone itself; but in the case of the sprain, the greatest pain is found in front of the anterior border of the bone. It is in these cases that the elastic bandage has such excellent effects.—*Revue de Thérap.*, July 15, 1884; *Practitioner*, Jan., 1885.

DEATH FOLLOWING THE HYPODERMIC ADMINISTRATION OF A QUARTER OF A GRAIN OF MORPHIA.

THIS case was reported by Dr. Reamy at a meeting of the Cincinnati Academy of Medicine. Half an hour after an operation under ether for a laceration of the cervix uteri and of the vaginal portion of the perineum, the patient, a lady, aged twenty-eight, being then "in excellent condition," was given a hypodermic injection of a quarter of a grain of morphia, the powder being dissolved in fresh water with the addition of a ninety-sixth of a grain of atropia. In twenty minutes she ceased to complain of the pain she had previously experienced in the locality of the sutures in the perineum, and for an hour conversed cheerfully with her friends. An hour and a half later Dr. Reamy, on being summoned to her room, found her in a profoundly unconscious condition. All the usual remedies failed, and death occurred eight and a half hours after the first administration of the morphia. No *post mortem* examination was made. The case was discussed at great length at the meeting, and is reported in full in the *Medical News* of Jan. 3, 1885.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XII.—*Basic Aural Dyscrasia; being an inquiry into a condition of system disposing to Aural Disease, now for the first time described as the Basic Aural Dyscrasia, involving an explanation of the mode of causation of Tinnitus Aurium, and a description of a hitherto unnoticed form of Deafness—Vascular Deafness.* By ROBERT T. COOPER, M.A., M.D. Univ. Dubl., London.

NOTWITHSTANDING the increasing literature upon aural diseases, the wide-spread attention that in all civilised countries is being devoted by professional inquirers to them, and the interest they secure from the intelligent public, the treatment and pathology of these diseases, more especially such as are attended with simple chronic difficulty of hearing, are, it must be confessed, in a lamentably unsatisfactory state.

In coming forward, therefore, with such pretensions as are implied by the title of this article—involving, as it does, the description of what we believe constitutes a new, or, more properly speaking, an imperfectly-described form of deafness—indulgence will surely be vouchsafed when I declare it essential to the proper recognition and comprehension of our position if, at starting and throughout this article, I institute a superficial comparison between the structural peculiarities of the ear, in a clinical point of view, and those of other organs, more particularly the eye.

A correct view not alone of the tissue alterations induced in an organ by disease, but as well of the pathological disposal, so to

speak, of the organ as a whole, invariably gives us an advantage when we come to discuss the treatment of its diseases.

To the clinician the embarrassing feature with which he is confronted when making an examination of an ear-case is that the organ, unlike the eye, is wholly imbedded in and hidden away by bone. Local examination reveals to ocular demonstration very little, save the condition of the tympanal membrane, and though inferentially we are enabled, thanks to "our instruments of precision," to ascertain the state of the Eustachian tube, the middle ear, and the auditory nerve, the matter is one of inference, and consequent uncertainty, and can scarcely be said to meet the demands of a truly scientific inquirer.

Then we find, broadly, that the ear, unlike the eye, has one entire bone, and only one,[a] devoted to its requirements; and upon inspection we find that this bone—we refer, of course, to the *os temporalis*—in devoting itself entirely to the ear, is pierced in its hardest and most compact portion—the *pars petrosa*—by foramina carrying arteries and nerves of the most delicate description, and that it gives shelter and security to each one, and protects it from injuries such as might otherwise result in destruction of its organ as an acoustic instrument.

We find, too, that to the arteries, veins, and nerves, are assigned separate and distinct channels or grooves, through which they wend their way, protected from harm, in seeking to effect an entrance to the delicate structures that go to form the anatomical divisions known as the internal and middle ear. This gives to each strand of tissue, whether it be a muscle, artery, vein, or nerve, an individuality of action, a separateness and distinctness not to be paralleled in any other organ of the body.

This temporal bone, which Nature has wedged in to the other bones of the head, so as to constitute with them one compact and, during life, indivisible structure, appropriates to itself the maintenance of the ear, and ministers to the requirements of its organ, to an extent that no other bone in the body can be said to do in regard to the vital functions of the part with which it is connected. Being thus wedged in, and its arteries, veins, and nerves, and even its muscles, circumscribed and insulated in a way such as conduces to the restriction of all movement, save what is absolutely demanded for the maintenance of its organ's functions, the chief one

[a] The *ossicula*, which pertain more to the sesamoid class of bones, may for the moment be well left out of consideration.

of which is the reception and transmission of sound-vibration, this special and distinctive disposition of the bone, in regard to the constituent parts of the ear, will be seen to possess an important bearing when we come to consider the symptom so often met with as an accompaniment of aural disease, tinnitus aurium.

Then we find that though the ear, as a perfect acoustic instrument, is constructed so as to recognise the most delicate vibrations of sound coming from without, it is yet surrounded by large blood-vessels carrying in their channels the blood-supply for the cerebral tissues, and that it has in front of its external sound-conveying orifice the glenoid depression (or cavity) upon which works, in almost constant movement, the lower jaw, acted upon, as this is, by powerful muscles, themselves sound-producers, during the vital acts that necessitate the opening and closure of the mouth. Hence the conclusion is an obvious one—that provision is made for the shutting off and non-recognition of the sounds that are produced by the movements required for the healthy maintenance of the bodily functions, and this at a time when provision is likewise secured for the delicate appreciation of the finest extra-corporeal vibrations. So that, admitting this, the inference is natural that, sentinel-like, the ear must be alive to the notification of vibrations given off in a manner incompatible with, and therefore different from, those characterising a condition of healthy or normal activity. An organ ministering to such diverse and, as it were, contradictory functions as these, must necessarily be complicated. To say that it is so, and to say that the ear is imbedded to a large extent in bone, does not adequately explain or excuse our shortcomings, when we come to examine its diseased conditions. Here we find the contrast between it and the eye is complete.

With our improved methods of inspection, the dioptric media with the vascular and nervous expansions, so to speak, of the eye can be unfolded to view, and the skilled examiner can not only inspect and record any alterations from health, but by virtue of such inspection he can estimate with a great approach to correctness the capabilities of the eye as a visual organ, and can even give an opinion as to the history and duration of the disease. The eye, in a word, is the organ of vision, and a visual inspection is all-sufficient for the diagnosis of its diseases.

The clinical examiner is placed in altogether a different position in regard to the ear. Broadly, all he obtains actual inspection of is the tympanal membrane, and if disease force has so expended

itself as to have effected an actual breach in this otherwise feebly transparent protecting diaphragm, the existence of such imperfection is not necessarily attended with any great deprivation of the hearing faculty. What is more common, for example, than to find in the same patient a perforated membrane in the one ear, and an unaltered and apparently a natural membrane in the other, with a fair amount of hearing existing in the former, and an intractable deafness in the ear that to inspection appeared healthy and unchanged. The ear, then, is the organ of audition; it becomes of pressing importance to inquire if our auditory faculties will help us to any large extent in the determination and diagnosis of its diseases.

Let us, however, before passing on, consider the characteristic peculiarities of the ear as a seat of disease. The grand point we have just touched upon—that it may be the seat of considerable tissue-change, without any corresponding or commensurate enfeeblement of hearing; or, on the other hand, that it may be quite insufficient for purposes of hearing with no diagnosable tissue-change but what is hypothetical, or, at all events, not demonstrable upon inspection of the ear itself.

We are, of course, expressing ourselves in a broad sense, and our readers must credit us with the expression of accuracy only in regard to the leading features of aural disease. To illustrate our position:—

Mr. Hinton[a] gives us a case reported by the late Dr. Cassells, of Glasgow, that he (Mr. Hinton) considered "of the greatest importance in the determination of the true function of the labyrinth." It is one in which a no less grave organic change occurred than the sloughing away of the entire cochlea; an engraving of the necrosed cochlea very properly accompanies the details of this very interesting case. On October 19th, 1873, Dr. Cassells removed from this patient the necrosed cochlea, which he perceived projecting through a perforation in the left membrane. On 1st December he tested her hearing "by the diapason and watch, as well as by the piano," and the report testifies "that it was not possible to discover that the patient had suffered any impairment of the perception of the various tones." "She distinguished," the report goes on to say, "without any difficulty, all the notes of the scale of the piano," and aerial as well as perosseous hearing existed, though not to a normal extent, in the left ear.

[a] The Questions of Aural Surgery, pp. 296-299. London: Henry S. King. 1874.

Again, Dr. Foulis, Pathologist to the Glasgow Royal Infirmary, examined the ears of 112 bodies, *whose symptoms during life did not point to ear disease*, and he found that 15 per cent. of the cases presented evidence of inflammation or other abnormal condition of the ears."[a]

Then, again, Mr. Hinton[b] states that "while dissecting the ears of children that died under my observation, I was struck with the extreme frequency with which (whatever the fatal disease) the tympanum showed signs of inflammation, *often advancing to an extreme degree*."

Again, Dr. Adam Politzer, in his "Treatise upon the Membrana Tympani," refers to the fact of his having examined the ears of the students attending his class, presumably not deaf, and to having found with many of them calcareous deposits in their tympanal membranes.

These facts appeal with an eloquence that places the matter beyond dispute, and prove that profound tissue-change may exist in the ear without commensurate dulness of hearing; and seeing that this is so, may we not be excused if, for the moment, we leave out of consideration such pathological teachings as, in explanation of the causation of the symptom, deafness, necessitate the acknowledgment of such organic changes as stiffening and thickening, stapedial ankylosis, auditory nerve paralysis, &c., undoubted factors, as these are admitted to be, in the causation of deafness, belonging, as they do, to local and proximate changes, and consider whether an examination of the disturbance of parts distant from the ear will not put us into possession of a better acquaintance with the way in which enfeeblement of hearing comes about.

In the pages of this Journal, under the heading, "The Wisdom Teeth and Deafness,"[c] I, for the first time, pointed out that an abnormal and irregular development of these teeth very often is found in association with an intractable form of deafness, and I was careful to point out that, while this departure from the ordinary natural process of dental eruption accompanied the deafness, the presence of such irregularity did not necessarily justify, in all cases, the conclusion that this was the sole *cause* of the deafness.

An inquiry, then, into whether there may be a pre-established

[a] Brit. Med. Journ. October, 1880.

[b] Op. cit., p. 226.

[c] Vide No. for September, 1881. The Wisdom Teeth and Deafness. By Robert T, Cooper, M.D.

condition of system, that not alone accompanies such mal-eruption of the teeth, but which constitutes the basic dyscrasia that at once disposes the ear to enfeeblement, and acts so as to reduce or otherwise modify the vital force necessary for the natural up-throw of the teeth, is manifestly of primary importance for the proper comprehension and recognition of aural disease.

Such disposition in the system I am in the habit of describing as the basic aural dyscrasia; but it is obviously necessary that we should, before proceeding further, seek to establish our position by proving its existence, and confirming it as a pathological reality.

Proceeding, as we began, by instituting a clinical comparison of the eye and ear, it is striking how frequently mention is made by the non-professional public of "weak eyes," and the existence of such a condition, under various scientific denominations, is recognisable in medicine. The corresponding term, "weak ears," we hardly ever find used, and, apart from the symptom, deafness, it can scarcely be said to be recognised, certainly not adequately described, in medical literature. When we come to consider that the terms deafness and blindness are corresponding ones, the absurdity and untenable nature of our position as scientific inquirers into aural disease is at once apparent; we stand self-condemned upon the mere statement of our case. The unreality of our position is especially obvious when we remember that the treatment of aural cases is not usually begun until deafness—the blindness of the ear—is announced.

Attention has been given to the pathological tissue-change capable of leading to, and found in association with, the symptom, deafness; attention commensurate with the importance of the subject has not been paid to what is of very much greater importance—the various forms of weakness that culminate in the production of this deafness.

Assuming for a moment that I hold a brief in opposition to the entire family of aurists, how strong will be my position when thus placed? They will stand convicted of a mere recognition of the consequences of previous disease, in the absence of any consideration of its initial stages. Their position will be that of a geographer who notices the existence only of immense channels of water going to form lakes, seas, and oceans, without acknowledgment of the springs and smaller streams, in the absence of which none of these could exist.

True, we acknowledge the existence of ceruminous collections in

the *meatus auditorius externus*, of mucous obstructions in the Eustachian tube, of serous, mucous, and hæmorrhagic accumulation, as well as of stiffening and thickening, in the structures of the middle ear; but this recognition, be it remembered, is not made apart from the symptom, deafness.

If, then, the diseases of the ear are to be inquired into upon lines the same as those of any other organ of the body, it will follow that all these hitherto described pathological changes in the ear are sequential to a condition of weakness or enfeeblement, unless, indeed, we suppose the ear to be constructed and influenced in a way different from other parts of the body.

The existence, then, of a weakness preliminary to the onset of the symptom, deafness, is established, if for no other reason than that its precedence is a simple necessity; equally, the mere fact of having to resort to argument to prove its existence establishes its main feature—the absence of subjective symptoms. The admission that neither our methods of ocular inspection of the ear, nor the aural symptoms complained of, reveal the existence of such preceding infirmity, we readily—in, at all events, a broad sense—admit.

The ear then being, as we impressed, the organ of hearing, and direct inspection standing condemned as an imperfect method of diagnosis in preliminary aural weakness, inquiry is natural whether, as before suggested, help will come by resort being had to the scientific application of our faculty of hearing.

In considering this question, we take up, for introductory purposes, the first compendium of the Diseases of the Heart and Blood-vessels to hand. Under the heading of "Functional Diseases of the Heart," Dr. R. W. Semple writes[a]:—"Many cases, more especially in females, present themselves with apparent symptoms of disease of the heart, in which, however, that organ, although weak, is sound in structure. The disease, in fact, is in the blood, which is deficient in red corpuscles, and contains an abnormal proportion of water." "But," he goes on to say, "the stethoscopic signs are very remarkable, and there is not only a blowing murmur in the arteries, but also a loud continuous murmur in some of the veins. Unlike the murmurs caused by organic disease, these murmurs are transient in their duration, disappearing when the condition of the blood is improved. The position of the arterial murmurs is over the base of the heart, and is always systolic, and the sound may very often be heard in the carotid arteries."

[a] Manual of Diseases of the Heart, pp. 267-8. London: J. & A. Churchill. 1875.

Supposing now that we leave aside all scholastic disputations as to the fluidity of the blood, and of the necessary association of these murmurs with a condition of anæmia, and that we make use of the faculty of hearing in pronouncing upon the nature and gravity of every case of ear disease that comes before us, what, then, will be our position? Why this, that certainly in a very large proportion, if not in quite as many as we would put it—namely, in 95 per cent. of aural patients, taking these as they come before us promiscuously in the out-patient department of an hospital, we shall find that such murmurs prevail.

This, at least, is my experience, and I can lay no claim to any special delicacy of stethoscopic perception; it is, I conceive, in every way a most important observation, as it not alone establishes the existence of a pathological entity in connexion with our basic aural dyscrasia, but it enables us to pass judgment upon the probability of aural involvement years before such infirmity pronounces itself by noticeable imperfection of hearing, and it also, as we shall see, supplies a logical and sufficient explanation of the extreme difficulty that exists in the removal of the symptom, deafness, when it becomes an established infirmity.

(*To be concluded.*)

ART. XIII.—*Ivory Exostosis of the Auditory Meatus.*[a] By ARTHUR H. BENSON, F.R.C.S.I.; Ophthalmic and Aural Surgeon to the City of Dublin Hospital; Assistant-Surgeon to St. Mark's Ophthalmic Hospital.

IT is not many years since the first case of successful operation for the removal of ivory exostosis of the meatus was recorded, and though since then several such have, from time to time, been placed on record, the case which I wish to bring before the Academy of Medicine possesses some points of interest which, perhaps, justify its publication.

The terms "exostosis" and "hyperostosis" are ones which are rather indefinitely used by different authors, and this has led to confusion. Cassells[b] is at considerable pains to distinguish between these two forms; the term "exostosis" he confines to *new growths* of bone in the meatus, usually ossified granulations, tolerably soft,

[a] Read in the Surgical Section of the Academy of Medicine in Ireland, February 20, 1885.

[b] Trans. Int. Med. Congress. 1881. Vol. III.

tender to the touch, usually pedunculated, growing from the posterior wall, and only to be found arising at the outer half of the external auditory meatus, having their origin in the periosteum of the mastoid, close to the meatus, and usually single.

The "hyperostoses" are *hyperplasms*, are never pedunculated, are usually of intense hardness, not tender to the touch, may grow from any portion of the osseous canal, and are usually multiple. The following case would, therefore, belong, according to the above definition, to the class of "hyperostoses," but I have preferred to follow the more usual, if not the more scientific, nomenclature :—

Case.—Mr. N., aged thirty-three, of full habit of body and an indefinitely gouty and rheumatic descent, was sent to me by Dr. Allen, of Middleton.

History.—He stated that formerly he used to bathe much in the river, but that he gave it up many years ago because it affected his ears, and he suffered from ear-ache, which he sought to relieve by applying laudanum and sweet oil, but that for the last three or four years he had not had any trouble of that kind. Recently he had applied to Dr. Allen, in consequence of deafness in the right ear, caused by an accumulation of cerumen in the meatus. On removing this with some difficulty, an exostosis was observed, and he was recommended to consult me, which he did in September, 1883.

Stat. Præs.—I found in the right ear three bony bosses protruding into, and partially blocking up, the lumen of the meatus externus. Two of these were situated close to the membrana tympani, and grew from the anterior and posterior walls of the meatus. Between them a tolerably wide slit existed, through which the membrane could be seen to be healthy. The third boss, which was also the largest, was growing from the anterior wall of the canal, and a considerable distance external to the others. It was conical in shape, and extended into the meatus so as to render full examination of the deeper growths difficult. Around and internal to this there was a considerable collection of cerumen and epithelial *débris*.

It seemed that the deafness was entirely caused by the accumulation of cerumen, &c., behind this bony prominence, for when the collection was removed by syringing the hearing was perfectly normal again.

This most external tumour was covered with pale, smooth skin, was not tender to the touch, appeared of ivory hardness, and was perfectly immovable. In the left ear a somewhat similar condition prevailed, but to a much less degree.

The diagnosis was plain, and the question of treatment at once presented itself. The choice lay between some operation for the removal of

the growth, and purely palliative measures, as removing the cerumen from time to time; for few will now-a-days place much reliance upon local applications of nitrate of silver, or iodine tincture, or yet upon blisters to the mastoid, or iodide of potassium internally—all of which have, from time to time, been uesd and praised by high authorities. The obvious disadvantage of adopting the palliative course was that sooner or later the passage would become too small to permit the removal of the cerumen, &c., and operation would then be imperative, whilst the growth being bigger and the passage smaller, the difficulties of the case would be greatly increased.

On the other hand, to undertake so serious an operation as the removal of an ivory exostosis before it became absolutely necessary to do so, seemed to me to be open to objections also. I therefore determined to try the effect of "electrolysis." I judged that by applying the current with a needle to the tumour in a number of places, I could so destroy the vitality of its covering as to produce a superficial necrosis, and, perhaps, in this way, remove the growth sufficiently.

Treatment.—A ten cell Leclanché's battery was accordingly brought into play, and a gold needle attached to the negative pole was thrust into the skin, covering the exostosis, the circuit being completed by making contact over the mastoid process with a pad attached to the positive pole.

In order to get at the internal aspect of the growth, I had a needle bent into a hook, which I was able to pass behind the apex of the cone, and stick into its internal surface. The pain caused by the application was considerable, but not excessive, and no pain or inflammatory reaction followed the *séance.* The application lasted five or six minutes, and after the removal of the needle the meatus was dusted with boracic acid in powder. Fourteen or fifteen such applications were made on consecutive days, and the whole top of the tumour was thus riddled with needle holes, and denuded of its soft parts. The patient was then sent down to the country, and I asked Dr. Allen to keep a look out for whatever might come from the ear. Six weeks later Dr. Allen sent me up a shell of bone, the top of the exostosis which had necrosed, and which he had removed when syringing the ear. It was evident, therefore, that the treatment had, so far, succeeded.

On January 24, 1884, five months after his first visit, he again consulted me. The exostosis had grown but very little, if at all, since I last saw him. The hearing was perfect, and the ear was not tender. He was, however, anxious that something further should be done, as the cerumen still collected on and behind the growth, and I gave him a choice of another term of electrolysis, or the more rapid and radical removal by the aid of a dental engine. He chose the latter.

Operation.—Dr. Arthur Baker kindly assisted me at the operation, which was done in his consulting room. Sitting in the dental chair,

ether was administered, and a vulcanite speculum, which was cut short for the occasion, was inserted as a guard to the soft parts.

The idea was to perforate the base of the tumour with a drill, and then with a saw or file[a] cut upwards and downwards from the central hole. This I found impossible to do, owing to the extreme density of the tumour, its sloping side, and the difficulty which I experienced in working the drill in the ear. After some unsuccessful attempts to make an impression on the side of the base, Dr. A. Baker suggested that it might be more easy to use the saw from the top. The soft parts over the exostosis were removed by a few turns of the rose, and the saw (which Dr. Baker showed) being attached to the engine, a groove was, with much difficulty, cut by Dr. Baker in the base of the tumour; into this a small chisel was inserted, and the bony apex of the exostosis, which I show, was, by a slight blow of the hammer, removed. There was a very considerable amount of bleeding during the operation, which, however, soon ceased, and the ear was plugged with boracic acid powder. The greatest possible difficulty was experienced in working in the ear with the instruments intended for the teeth, as they were not long enough to reach in without blocking up the view of the parts, and rendering it necessary to stop and syringe out the meatus every few seconds.

Had it not been for Dr. Baker's skill in working the engine, I do not think the operation would have succeeded, for he did most of the latter part of the work. The operation lasted two full hours, and we were both fairly exhausted when it was over. No bad symptoms followed, and in a fortnight the ear was looking quite healed; the hearing, which for a few days was defective from the swelling, &c., was normal, and he returned to the country. Since then I have seen him from time to time, last on January 20, 1885, just a year after the operation. There was not the slightest trace of an exostosis in the old position, only a slight scar marking the place it had occupied. The exostoses near the membrana tympani were, perhaps, somewhat larger, but hearing was then, and had since been, perfect. The exostoses in his other ear were somewhat more prominent, and larger than when last seen.

Into the question of ætiology I shall not enter, so many and various are the theories which have been from time to time advanced. My patient had never had rheumatism, syphilis, or gout; he had bathed in fresh, but not in salt water, and in his opinion it was the bathing which first started the ear trouble. This would agree with Field's ideas, but in his cases the agent was salt water. It seems probable that very many different causes may produce the periosteal changes which give rise to ivory exostosis.

[a] The saw is more like a screw; it is used on the flat, and cuts with a steady motion, without any backward and forward, or sawing motion whatever.

There has, of late years, been a steady and ever-increasing flow of opinion in favour of early operations in many classes of cases.

I am aware that, in operating in the case above described, I violated the rules laid down by most competent authorities, and I would, therefore, especially wish to obtain the opinion of the members of this Academy on two questions:

I. What is the proper time to operate on an exostosis?

II. What is the best method to adopt?

Most writers[a] lay it down as a canon that the operation is not to be performed until "total deafness has occurred in both ears," unless in the case of otorrhœa, where an exit must be provided for the discharges. It seems, however, reasonable, in view of the result of the case I have just described, to say that the earlier operation may, under some conditions, be the best. If the operation can be done with tolerable safety, and with but little fear of the tumour growing again, I think that the earlier it is performed the better—before the parts get much changed, whilst still it is possible to know the exact condition of, and see the exact position of, the membrane, and before the patient has had to endure the dreadful misery of gradually getting deaf, with all its isolation and despondency.

As to the best method of operating, each case must be considered according to its peculiar features. In electrolysis we possess an agent capable of doing good service in certain cases, and with patients too nervous to undergo the more formidable operation it would probably be borne well, and combined with the application of acids to the denuded surface, might prove curative. It is, however, slow, and rather painful.

Of the gouge and hammer alone I shall say nothing; the method seems to deserve nothing but condemnation.

That which we adopted in this case seems about as likely to succeed as any method, and has the advantage of almost absolute safety. It is much more easy for a drill to go astray in its course, and penetrate some vital part, than for the so-called saw to get out of the proper direction; and by making the cut only through, say, three-fourths of the tumour, and separating the remainder with a chisel and hammer, almost all danger of wounding the membrana tympani, or other parts in the middle ear, is avoided. It would be advisable, however, to get the saw considerably longer in the shank than the ordinary dentist's instrument, as with it the difficulty of illumination is very great.

[a] Politzer, Cassells, Barr, Burnett, &c.

ART. XIV.—*Note on a Case of Aphasia in a Child, with reference to the Evolutional Development of the Speech-centre.*[a] By ROBERT S. ARCHER, B.A., M.B., M.Ch. Univ. Dubl.; Physician, Netherfield Fever Hospital, Liverpool.

I SUPPOSE there is no fact in cerebral pathology better established than the one that aphasia is usually associated with lesions of the third left frontal convolution; and, further, the reason that this condition so frequently co-exists with right hemiplegia is that this convolution and the corpus striatum lying beneath it obtain their arterial supply from the same source—viz., the middle cerebral artery. It will hardly be denied that the most frequent causes of this two-fold lesion are the plugging by an embolus, or hæmorrhage from the branch of this vessel which goes to supply the portion of the cerebral mass alluded to. More rarely aphasia may exist alone, without the co-existence of right hemiplegia, and in this case we are led to suppose that the lesion (destructive or otherwise) which produces it, is more circumscribed—confined, in fact, to a certain definite portion of the cerebral cortex situated in the convolution mentioned above.

The fact that aphasia so frequently accompanies right-sided hemiplegia, is usually explained by the close proximity of the speech-centre to that for moving the right limbs, or at least the right upper limb. An attempt to explain why the speech-centre is so located will now be made, on the supposition that articulate language for the conveyance of ideas is an evolutional development of gesture language as probably practised by the remotest ancestors of the human race, and even at the present day, to a large extent, by the very lowest types of man. But why the faculty of formulating words so as to express ideas by intelligible language should be specially localised in a certain part of the third left frontal convolution in preference to the corresponding region of the opposite hemisphere, or indeed to any other portion of the cerebral mass, has not, so far as I am aware, been at all satisfactorily explained. The fact that the majority of people are right-handed, and the particular cerebral centre, lesions of which cause aphasia, being in close proximity to the centre for moving the right upper extremity, leads to the supposition that the two centres have been to a large extent educated together, the one for collecting and sifting ideas, the other for the mere facile use of the right hand; and, further, it may be

[a] Read at a Meeting of the Liverpool Medical Institution, on February 5th, 1885.

presumed that this association has become strengthened by hereditary transmission from generation to generation. This theory would appear to gain force from the circumstance that occasionally cases of aphasia are recorded associated with left hemiplegia, in which the patient has been ascertained to have been left-handed, and the lesion was found in the right side of the brain. From this it would appear that the speech-centre is associated with the centre for moving whichever upper limb is most used individually.

If there be any truth in the theory of evolution as applied to the advance of civilisation in the human race, the following considerations may, perhaps, account for the association of the speech-centre with that which presides over the movements of the right upper limb. In pre-historic times, before the savage ancestors of the human race had learned the art of shaping stones and flints so as to be useful for the ordinary purposes of dawning civilisation, we may imagine that the then inhabitants of this globe were equally facile in the use of both hands for the purpose of procuring food, probably by grubbing in the ground for roots, and gathering the fruits of trees. If at this very remote period there was any conveyance of ideas by articulate sounds, both sides of the brain probably were engaged in the process, and both hands used in gesticulation. As the use of rude stone implements became developed and specialised, probably one hand came to be used in preference to the other, and the race would become more facile, from practice, in the use of this hand (for the sake of our argument it is immaterial which). Possibly from some accidental circumstance or other the right became the favourite hand. If we proceed a step further in this line of thought, it is possible—nay, certain, that a tribe, in the course of time, waged a savage warfare with the neighbouring tribe, and the chiefs of these tribes may be supposed to have led on their followers by brandishing their rude stone-headed spears in their right hands, and at the same time ejaculating savage war-cries. Thus, as time advanced, and various arts began to become more highly developed, the right hand continued to exert its pre-eminence over the left, and the left side of the brain would become more educated for directing the performance of delicate manual acts than the right. From time to time a man of larger brain-power than his fellows would arise, and, it may be, formulate the rude ejaculations into a primitive form of speech for the interchange of ideas relating to warfare, and the procuring the necessaries of life. At first it is not unlikely that this rude form of speech was

accompanied by gestures performed principally by the right hand. Even at the present day we see how orators, to emphasise their speech, make use of gestures, but in ordinary conversation it is not usually so, except amongst excitable people and those who are not well educated. According as the brain became more developed, or, in other words, the race more civilised, words would become more numerous, and speech would grow into a recognised means of conveying ideas, gestures not being used at all, or quite in a subordinate manner. Thus, in the course of generations the left side of the brain would become the centre for formulating speech, and the hereditary transmission of this faculty would still further tend to strengthen and develop the third left frontal convolution in this function.

The case to which these few theoretical remarks are prefatory, is briefly as follows:—

Case.—A boy, aged nine years, came under my observation on October 23rd, 1883. He was rather delicate and thin, and was suffering from bronchitis. When fourteen months old, just as he was commencing to speak, he had a "fit," lasting about an hour, in which "his hands and teeth were clenched," and he "worked all over." As far as I could ascertain, both sides of the body were equally affected. No definite paralysis of either side remained after this attack, but there was general weakness. His forehead was low, and his aspect not very intelligent, but, at the same time, not that of an imbecile. What immediately arrested my attention was his utter inability to speak, although he understood every thing that was said to him, and answered questions by gestures. His sight and hearing were perfectly normal. The only articulate sound he made use of was "good, good," when anything pleased him. Questions were answered in the affirmative by moving his head forward, and in the negative by shaking it from side to side, just as people indicate assent or dissent. When asked to shut the door or do anything else, he immediately performed the act, showing that he perfectly understood everything that was said to him. He joined his brothers and sisters in play, and from time to time uttered unintelligible sounds, which proved that the larynx was in working order, so far as phonation was concerned. During my absence from home in August, 1884, he died, and I regret extremely there was no *post mortem* examination.

A consideration of the circumstances of this case suggests two theories for the explanation of the aphasia—(1) The speech-centre was congenitally absent; or (2) the severe convulsive attack, occurring when the boy was fourteen months' old, so profoundly affected

the speech-centre as to destroy it, or, at all events, render it useless for the performance of its special function. Of these the latter would appear to be the more probable cause. The parents explicitly stated that when this attack supervened the child was commencing to speak. Therefore, up to this time it may reasonably be assumed that the speech-centre was in a normal condition for the due performance of its functions according as it became educated by example and experience. Then, quite suddenly, a heavy blow is dealt to the entire cerebral mass by a "discharging lesion," which, for some inexplicable reason, seems to have fallen with unusual force on a small and isolated portion of the brain, the rest of it escaping injury to any considerable extent. Had this blow fallen with equal vehemence on all parts of the brain, the result (immediate) would probably have been death. Had it fallen with equal but less severity on a larger surface, the consequence would have been paralysis in proportion to the extent injured; and, if the entire brain had been moderately but permanently affected, the resulting condition would have been general muscular weakness and blunting of the intellectual faculties—in fact, the child would have been a drivelling and chattering idiot, living an automatic kind of existence.

It seems to be quite possible, had this patient lived, that, under judicious training, a lactiguous portion or the corresponding portion of the brain on the opposite side might have been so far educated that the boy would have been enabled to convey his ideas by articulate language. The reason why adults, who have become asphasic, are so difficult to be taught to speak again, is probably due to the fact that the different portions of the brain have become so used to their various functions that no portion is left sufficiently unoccupied as to take on the lost function. But possibly, with much care and perseverance, even these might be re-educated to a certain extent.

Assuming that there is a connexion between the brain centres which preside over the movements of the arms and the faculty of speech, it would seem to be a matter for serious consideration in the education of the young whether it would not be possible so to train children from their earliest infancy that they should be as far as possible ambidextrous. By this means one portion of the brain would not be left, to a certain extent, to lie dormant, but would be capable, when the corresponding portion of the third frontal convolution of the opposite side became injured, of assuming, with a little exercise, entire control over the lost function. It would probably

be several generations before this object could be thoroughly accomplished, but by assiduous attention and hereditary transmission I imagine it would be quite feasible.

These are a few unconnected thoughts which a consideration of the case related above has suggested to my mind; and I feel that many of them are but empty theories on a subject lying more in the domain of psychology than physiology, and the solution of which may never be attained.

ART. XIV.—*A Case of Sloughing of the Rectum.*[a] By W. M. A. WRIGHT, M.D. Univ. Dubl.; Medical Officer, Killiney Dispensary; late Demonstrator of Anatomy, University of Dublin.

THE notes which I am about to lay before you are of a case of sloughing of the rectum in its third stage, which appeared to me to present features of sufficient interest in its history, course, and result to warrant my bringing it under the notice of the Academy of Medicine.

CASE.—On January 22nd, 1884, I was sent for to see a lady, aged sixty-five, a widow. Her history was as follows:—She was the mother of a large family, eight children, and had always led a most active and healthy life, taking great pleasure in outdoor amusements—as gardening, &c. She had only once suffered from any serious illness, when, after the birth of one of her children, for two months she was confined to her bed by an attack of inflamed piles; but ever since the birth of her last child, twenty years ago, she was annoyed by these piles, which never bled, but frequently slipped down while she was at stool, and required to be replaced by her fingers, a little operation which she was generally able to perform without difficulty. She stated emphatically that her bowels had always acted most regularly, and that she seldom or never required to take aperient medicine.

On visiting her I found her in bed, with temperature 100° and pulse 100, complaining of great pain from the piles, which had come down the day before, after a copious stool, and which she had not been able to replace. On examination I found a ring of piles outside the anus, tightly gripped by the sphincter, intensely congested, and very tender. Oiling them, I endeavoured to reduce them, and partially succeeded, but was soon compelled to desist, owing to their swollen condition and to the intense pain the attempt caused. I then prescribed soothing

[a] Read before the Medical Section of the Academy of Medicine on Friday, Feb. 27, 1885.

treatment, opium stupes, &c., locally, to relieve pain, and opium and belladonna internally. On the 25th the inflammation appeared to have extended to the vagina, the vulva becoming tender, and a profuse leucorrhœa setting in. On the 27th retention of urine came on, and for eight days I had to relieve the bladder by the catheter.

On the 28th she told me that she was suffering from diarrhœa, and the nurse showed me what passed from the bowels—thickish, yellow, semi-liquid fæces, with no sign of mucus, or of solid lumps. On this day the skin covering the buttocks on either side of the anus became red, glazed, and erysipelatous-looking, and felt very tense, the inflammation being much more marked on the right side.

On Feb. 1st the skin gave way on the right side, about an inch from the anus, and through this opening liquid fæces commenced to pass. By the 3rd of Feb. the external opening appeared as large as a threepenny piece, and almost all the fæces passed through it, hardly any escaping by the anus.

On the 4th she regained power over her bladder, and the tenderness from the inflamed piles had so much diminished that I was able, for the first time, to make a rectal examination. On introducing my finger I passed it into the largest mass of impacted fæces that I ever met. Before withdrawing my finger I broke up as much of it as I could reach, and then gave a copious enema of soap and water, passing an O'Beirne tube as far as possible—about five inches. The enema brought away a number of scybala, most of which passed by the fistula. Next day I repeated the same treatment, again breaking up the mass, which seemed unreduced in bulk, with my finger, and then giving an enema. The result was, to use the nurse's expression, "a bucketful." The following day again the same enema and result, and now I could clearly define the internal opening of the fistula. At the right side of the rectum, about one and a-half or two inches above the anus, a portion of the wall of the gut had sloughed clean away, leaving an internal opening as large as a half-crown piece.

At this time my friend, Dr. C. B. Ball, saw the case with me, and while examining her was able, with his finger, easily to press some scybala, quite as large as walnuts, through the fistula. He suggested the use of enemata of olive oil and oil of eucalyptus, which proved most effective, but their smell was so much disliked by the patient that I had to discontinue them. By daily copious enemata, from 4th to 10th Feb., I at last got the bowels free from the fæcal accumulation, and my patient gradually improved in strength, but still complained much of pain over the gluteal region on the right side, where the skin remained tense and red, until the 14th, when an abscess which had formed under the skin there opened into the fistula, causing a copious discharge of odourless, healthy pus. After the evacuation of this abscess

my patient's recovery was uninterrupted, and by the end of March she was able gradually to resume her former active habits.

I last examined her on the 22nd of April, and found the fistula had so closed that it would with difficulty have admitted a small-sized probe; the piles remained external, but their mucous surface had become hardened and insensible to pain. I may add that all through she steadily refused to permit any operative interference.

Remarks.—First, as to the exact nature of the case, there can be little doubt that the primary cause of the acute trouble was the presence of the enormous fæcal accumulation, which had formed without the slightest suspicion of the fact on the part of the patient. My opinion is that the irritation and pressure caused by this mass set up the inflammation of the rectum and of the hæmorrhoids; that the continued pressure caused the sloughing of the bowel, just as the continued pressure of a fœtal head during the second stage of a tedious labour may cause sloughing of the vaginal walls. The rectum having given way, the escape of the fæces into the cellular tissue of the ischio-rectal fossa accounted for the periproctitis, the erysipeloid condition of the skin over the buttock, and its ultimately giving way to form the external opening.

Probably the retention of urine was due more to reflex irritation than to any direct extension of the inflammation to the bladder.

I regret that I was able to make only a very hurried search into the literature of the subject, and could not find any cases at all similar to mine recorded, except in *The Lancet* for June, 1866, where there is an account, by Mr. T. W. Nunn, of two cases of "Gangrene of the cellular tissue of the ischio-rectal fossa," which resembled my case in the erysipeloid state of the skin over the buttock, but which differed in that in both cases there was no ascertainable connexion with the rectum, that there was a distinctly gangrenous smell from the cellular tissue, and that there was great constitutional prostration (with brown furred tongue, &c.). While in my case there was a large opening from the rectum into the fossa, at no period was there any more objectionable smell than that of fæces; even the pus from the abscess which formed under the skin of the buttock, and which communicated with the fistula, was odourless; and, lastly, the constitutional disturbance was remarkably slight, considering the gravity and extent of the local mischief and the age of the patient. At no time was her tongue much furred, or her temperature over 101° F.

With regard to the treatment it must be remembered that the

patient was most reluctant to permit local measures, and refused surgical interference, relying on the fact that on a former occasion she had recovered from an "attack of piles" without any local treatment except warm stupes. Looking back, there is one thing I regret that I did not insist on—a vaginal examination at the beginning of the case when, of course, I would have detected the presence of the fæcal mass, but even had the cause of the attack been patent from the very first, efficient steps for its removal could not have been taken until the time when I actually commenced them, when the first intensity of the inflammation had somewhat subsided.

In conclusion, I am happy to say when last I saw my patient she informed me that she felt as well as ever she had in her life. She thought the fistula must have quite closed up, as it gave her no trouble whatever; the piles still remained external, but were smaller, and did not annoy her; that her bowels acted daily and freely, and that she would not allow any operation to be performed on her.

ART. XVI.—*Cases of Osteotomy for Deformity of the Lower Limbs.* By L. HEPENSTAL ORMSBY, F.R.C.S.I., M.D. Univ. Dubl.; Lecturer on Clinical and Operative Surgery, and Surgeon to the Meath Hospital and County Dublin Infirmary; Surgeon to the Children's Hospital, Dublin.

I. OSTEOTOMY — SUPRA-CONDYLOID OPERATION FOR GENU VALGUM, DETAILING STEPS PRIOR, DURING, AND SUBSEQUENT, TO THE TRANSVERSE SECTION OF THE FEMUR IMMEDIATELY ABOVE THE CONDYLES.

II. THE HISTORY AND PROGRESS OF TWELVE SELECTED CASES OF OSTEOTOMY FOR DEFORMITY OF THE LOWER LIMBS.

I. OSTEOTOMY.

OSTEOTOMY is now an operation which every practical surgeon performs, although for some years it was confined to the specialist. I believe that the operation, if it is done under the spray, and with full Listerian precautions, is perfectly safe, and not liable, in dexterous hands, to be followed by any untoward results. The patients on whom osteotomy is performed generally belong to a rickety, strumous diathesis. However, during a few weeks before

the operation the patient should be surrounded by good air, and prepared by suitable nourishment and medicine. Again, his body should be scrupulously clean, so as to have the skin thoroughly free from all deleterious substances that might prevent union of the skin and flesh wound by first intention. Thirdly—The skin wound should not be made too large, only sufficient to allow the entry of the osteotome. Fourthly—MacEwen's osteotomes, which have been well tested, are the best to use, together with his mallet. Fifthly—Esmarch's bandage should be applied a minute or so before the operation is performed. Sixthly—An indispensable point is to see that the bone operated upon is fairly divided, that the section is complete, and the distinct snap of the bone heard as it gives way. Any failure in the rectification of the deformity, I feel sure, is due to inattention to this point. The bone must be divided completely across, or the operation will not succeed. Seventhly—After the audible snap is heard, the limb should be bent in such a direction as to completely rectify the deformity. Eighthly—The edges of the wound should then be brought together by a single interrupted suture. I always use fishing tackle gut previously carbolised. Ninthly—The wound should also be well pressed, so as to get rid of any blood which might act as a foreign body, cause suppuration, or retard union. The protective is then applied with a pad of wet gauze above it, and layers of antiseptic gauze and a bandage. The whole operation should be done under an abundant jet of carbolic spray. The splint, suitable in form and length, should then be applied to the outside of the limb. In my first osteotomies I applied in every case MacEwen's splint. I now apply a much more simple one. Either a metallic splint, well padded, about two inches wide, bent to the proper shape, or, what I prefer most, a single stave of a small barrel, well padded, the bent shape of which acts admirably in correcting the deformity, particularly of knock-knee or genu valgum. The operation I always perform to correct genu valgum is MacEwen's, as I believe it to be the best, the simplest, and the one most likely to be followed by success in rectifying the deformity. It is also not likely to be succeeded by any articular disease or impairment in the knee-joint. I believe I have performed the operation of osteotomy more frequently than any surgeon in Ireland, and I am happy to say that up to the present I have not had a single bad result. This I attribute to the great care and attention paid to my cases by my assistants and nurses subsequent to the operation.

The instruments required for the operation are neither numerous nor complicated, consisting of—1. Esmarch's bandage; 2. A couple of osteotomes, in case one should break; 3. A small scalpel to make the primary incision; 4. A mallet (MacEwen's, about twenty-four ounces in weight); 5. Carbolic spray; 6. Needle, armed with fishing tackle gut, or other suture material, previously carbolised; 7. Sponges, protective and carbolic gauze; 8. Bandages; 9. Splint. I perform the operation in the following way, the patient being placed under the influence of an anæsthetic—ether I prefer, used with my inhaler. Esmarch's bandage is then applied—and a long narrow sand bag should be provided, previously wetted, so as to cause the sand to become more attenuated and firm. Wherever the bone is to be divided, I get an assistant to place the limb across the sand bag, and hold it firmly and steadily in this position with both hands, above and below the situation where I intend to make the section in the bone. Having allowed the spray to play on the part for a few moments, and washed the part well with a sponge steeped in one-twentieth carbolised solution, I take the knife and divide the skin and deeper structures parallel with the bone for about an inch, but not more. I then introduce my osteotome parallel with the bone, and press it firmly against the bone with my left hand, so as to divide all the structures, using the mallet in the right hand. When the bone is reached I turn the osteotome at right angles, and transversely to the bone to be divided. And in some cases, in very young patients, the firm pressure of my hand is sufficient to drive the osteotome through the bone. In others, however, which are hard and dense, the mallet must be used, and in some cases must be applied very smartly and firmly to complete the section. Thick bones are generally divided by first dividing the upper surface, then re-introducing the osteotome and dividing the lower portion. If, after the bone is thus divided by the osteotome, it is found still to be unbroken, the section can in most cases be completed by firm pressure with the hand above and below the point of section. An audible snap or fracture proclaims the complete division of the bone. When this is heard, the limb can be set or placed in any position that is required. In performing osteotomy, the chisel or osteotome used should always be introduced in a direction away from any large blood-vessel, not towards it.

After-treatment.—The patient is then placed in bed, an anodyne draught is administered, and the temperature is taken morning and

evening. If the temperature reaches 101° the patient ought to be carefully examined. If this rise in temperature cannot be otherwise accounted for, the limb should be looked to, the bandage, splint, and dressings removed under spray, and fresh dressings applied. If nothing untoward follows, the dressings need not be removed until they are altogether taken away and the wound found healed. A few hours after osteotomy of the bones of the upper or lower extremity, the fingers and toes should be looked to, to see that they are free from numbness and obstructed circulation; if they are not, the bandage should be immediately relaxed. Oozing and percolation of discharge should be looked for from day to day, but if this does not occur before the second day, it is most probable it will not occur at all. As long as it is absent the dressing need not be changed.

So far, my results in genu valgum, by MacEwen's operation, have been eminently satisfactory in improving the form, strength, and utility of the limbs. My treatment on an average has been about six weeks in splints and two weeks allowing the patient to walk about with great caution, so that from the date of the operation to the time the patient could get about again would be about two months. I have placed children on their limbs a week sooner, but not as a rule. I have divided both femora by the supra-condyloid section at the one operation, and I have done one leg first and then the other. However, the shock of the double operation does not seem to affect the child any more than the single operation; besides, it cuts short the time for the treatment by one-half when both legs are operated upon at the same time. After the first is performed the wound may be brought together, and a carbolised sponge placed over the wound, and a temporary bandage applied; the other limb may then be operated upon so as to save time during anæsthesia, and then the limbs can be dressed one after the other, and the splints applied in the same order. I have seldom met suppuration where the blood was well squeezed out of the wound, and dressed under spray and full Listerian precautions. Slight hæmorrhage occurred in two of my cases a few hours after the operation, but this was easily controlled by pressure. I never saw the popliteal or other large vessel wounded, nor did I ever meet with ankylosis or stiffness of the knee after the supra-condyloid section, and in only two cases did I find that a rectification of the deformity did not take place. This I attribute to the fact that the bone was not completely divided, and the audible snap of the bone fracturing was not heard,

which I consider most important for the permanent rectification of the deformity.

In *Genu Valgum or Knock-knee* the best place for the section is that laid down by MacEwen—viz.: "On the *inner* side of the limb at a point where the two following lines bisect one another—a line drawn a finger's breadth above the level of the upper border of the external condyle, and a line drawn parallel to and half an inch in front of the tendon of the adductor magnus muscle."

Management of the Osteotome.—After incision is made insert the osteotome with the right hand, and place it against the posterior part of the inner border of the femur; then turn it, grasping it firmly in the left hand, using the mallet with the right hand and cutting from behind forwards and outwards away from the femoral artery. It is also well to remember that just above the condyles the outer border of the femur is thicker than the inner.

In *Osteotomy of the Tibia* for bowed legs, the centre of the arch is the best point to select. The limb is Esmarched, sponged, &c., placed over a firm sand bag and held by a steady assistant, the incision made and the osteotome inserted in a direction away from the anterior tibial artery. When the bone is half divided it can nearly always be fractured with very little trouble by means of firm pressure of the hands.

The Plates represent one of my cases of genu valgum, before and after operation by MacEwen's method.

I also append twelve cases of osteotomy I have selected from a number I have performed in the Meath Hospital and Children's Hospital, Dublin :—

Case I.—*Genu Valgum; Osteotomy (MacEwen's); Result Good.*—Katherine R., aged seven, admitted to Children's Hospital, Dublin. Operated on right leg Jan. 4th, 1883. Left leg operated on Jan. 24th, 1883. Under spray and complete Listerian precautions no suppuration or complication. Treated with MacEwen's splint; result good; treatment, about seven weeks.

Case II.—*Genu Valgum; Osteotomy (MacEwen's); Result Good.*—Mary F., aged three, admitted to Children's Hospital, suffering from most aggravated double genu valgum, both legs. Assisted by my colleagues Sir George Porter, Mr. Smyly, and Professor Stokes, operated on Jan. 24th, 1883, at same time under spray and full Listerian precautions, no suppuration or complication. Treated with MacEwen's splint; result most satisfactory; treatment, six weeks; have photographs before and after operation.

PLATE I.—BEFORE OPERATION.



PLATE II.—AFTER OPERATION.



Case III.—*Genu Valgum; Osteotomy (MacEwen's); Good Result.*—David D., aged four, admitted to Children's Hospital, suffering from double genu valgum; both legs divided, May 12th, 1883, assisted by my colleagues, Sir George Porter, Mr. Stokes, and Mr. Smyly, and in the presence of Surgeon-Major Killery, Army Medical Staff, and Surgeon-Major Backhouse, of the Indian Medical Service; no suppuration or complication under spray, and with full Listerian precautions. MacEwen's splint applied; treatment, seven weeks; result good.

Case IV.—*Genu Valgum; Double Osteotomy (MacEwen's); Result Good.*—Maggie MacD., aged five, admitted to Children's Hospital, suffering from double genu valgum; both legs osteotomised, on Sept. 4th, 1883, assisted by Professor Stokes and Surgeon-Major Backhouse, under spray and full Listerian precautions; no complication or suppuration; MacEwen's splint used; treatment, eight weeks; result good.

Case V.—*Genu Valgum; Double Osteotomy (MacEwen's); Result Good.*—Francis M'C., aged five, admitted to Children's Hospital, Dublin, suffering from double genu valgum. Double osteotomy performed Sept. 5th, 1883, assisted by my colleagues, Mr. Smyly, Professor Stokes, Dr. Newell, and Surgeon-Major Backhouse, under spray and full Listerian precautions; no complication or suppuration. For this case I used my own splint; result good; treatment, six weeks.

Case VI.—*Genu Valgum; Double Osteotomy (MacEwen's); Good Result.*—Mary L., aged four, admitted to Children's Hospital, suffering from double genu valgum. Double osteotomy performed February 6th, 1884, assisted by my colleague, Professor Stokes, under spray and full Listerian precautions; no complication or suppuration. Applied my own splint; result good; treatment, seven weeks.

Case VII.—*Genu Valgum; Single Osteotomy (MacEwen's); Result Good.*—Theresa P., aged two, admitted to Children's Hospital, suffering from double genu valgum. Single osteotomy performed Oct. 9th, 1884, assisted by my colleagues, Professor Stokes, Dr. Wm. Moore, and Mr. Smyly. In this case the bones were so soft I had not to use the mallet; the osteotome was sufficient of itself, with the pressure of my hands, to divide the bone. Operation performed under spray and full Listerian precautions; no complication or suppuration. Applied my own splint; result most satisfactory; treatment, five weeks.

Case VIII.—*Genu Valgum; Single Osteotomy (MacEwen's); Result Good.*—Julia M., aged five, admitted to Children's Hospital, suffering from single genu valgum, left leg. Single osteotomy performed Oct. 9th, 1884, assisted by Mr. Smyly and Professor Stokes. Operation performed under spray and full Listerian precautions; no complication. Applied my own splint; result good; treatment, five weeks.

Case IX.—*Genu Valgum; Single Osteotomy (MacEwen's); Result Good.*—Winifred B., aged four, admitted to Children's Hospital suffering from genu valgum. Single osteotomy performed on left leg on Oct. 9th, 1884, assisted by my colleagues, Mr. Stokes and Mr. Smyly; performed under spray. Primary and intermediary hæmorrhage occurred, controlled by pressure; suppuration occurred; wound had to be dressed every second day; suppuration lasted fourteen days; result very good; treatment lasted eight weeks.

Case X.—*Genu Valgum; Double Osteotomy (MacEwen's); Result Good.*—Anne C., aged five, admitted to Meath Hospital and Co. Dublin Infirmary, suffering from most aggravated double genu valgum. Double osteotomy performed on June 18th, 1884, assisted by Sir George Porter and Messrs. Smyly and Hepburn, and in the presence of Deputy Surgeon-General Marston, Army Medical Staff. Under spray and complete Listerian precautions no complication whatever occurred; dressing never was changed till three weeks after the operation, when wound was healed; child allowed to walk in five weeks. My own splint applied. Photographs of C.'s case depicted before and after. [See Plates I. and II.]

Case XI.—*Genu Valgum; Single Osteotomy (MacEwen's); Result Good.*—B. W., aged four, admitted to Children's Hospital suffering from single genu valgum. Single osteotomy performed on right leg on Jan. 16th, 1885, assisted by Mr. Stokes, under spray and full Listerian precautions. Slight hæmorrhage occurred a few hours after operation, caused by the restlessness and movement of child. Notwithstanding this slight complication the case did well, and the wound healed in less than three weeks.

Case XII.—*Double Osteotomy for Double Bowed Legs.*—Kate T., aged three, very strong-looking child, admitted to the Children's Hospital, suffering from excessive bowing of both legs, principally in tibia. Forcible fracture attempted on July 19th, 1884, which could not be effected; so double osteotomy was performed, and the centre of each tibia was partially divided, and the rest fractured. Hæmorrhage followed, together with suppuration. The treatment lasted two months, and the result was not as satisfactory as might be expected, as it was found that although the tibia were straightened the thigh bones were greatly curved.

In all these selected cases ether was the anæsthetic (with Ormsby's inhaler) used.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT WORKS ON DISEASES OF CHILDREN.

1. *Lectures on the Diseases of Infancy and Childhood.* By CHARLES WEST, M.D., &c. Seventh Edition, Revised and Enlarged. London: Longmans & Co. 1884. Pp. 896.

2. *A Practical Treatise on Disease in Children.* By EUSTACE SMITH, M.D., F.R.C.P.; Physician to H. M. the King of the Belgians; Physician to the East London Children's Hospital, and to the Victoria Park Hospital for Diseases of the Chest. London: J. & A. Churchill. 1884. Pp. 844.

THE increasing number of works on the diseases of children that are issuing from the press of nearly every European country and of America is indicative of the great advance that has been made within the last few years in our knowledge of this special subject, and of the attention that is now bestowed upon one of the most interesting and instructive departments of medicine. Until the comparatively recent establishment of hospitals for children, and the opening of special wards for the treatment of their diseases in general hospitals, pædiatrics devolved for the most part upon nurses and obstetricians. Many of the latter were, doubtless, very competent practitioners, and possessed a large amount of experience in the treatment of maladies incident to infancy and childhood; but with a few notable exceptions medical science is not proportionately indebted to them, in these countries at least, for much information on the subject. In England the first edition of the well-known and valuable classical work that heads our list was published in 1848; and in Ireland the first of the three editions of Dr. Fleetwood Churchill's "Diseases of Children" appeared in the following year. Dr. West gracefully, and very legitimately, claims the credit of being the founder of the first Children's Hospital in England. The success of this institution was, as we know from a private letter written shortly before its foundation, "his darling project." As

that success has been achieved during his lifetime, on a firm and stable foundation, Dr. West is now in his honoured age deservedly entitled to feel gratified in the fulfilment of his wishes, and in the consciousness—which is perhaps more to him—"that he has done good in his day."

The Great Ormond-street Hospital for Sick Children in London was instituted in 1852. Thirty years before this the Institution for the Treatment of Diseases of Children was established in Pitt-street in this city; and in 1836—that is twelve years before the appearance of Dr. West's lectures (which were previously printed in the *Medical Times and Gazette*)—two of the staff of that hospital published "A Practical Treatise on the Management and Diseases of Children." Both these gentlemen, Dr. Richard T. Evanson and Dr. Henry Maunsell, were Professors in the Royal College of Surgeons in Ireland, the former Professor of Medicine, the latter of Midwifery and author of "The Dublin Practice of Midwifery." Their joint work, an excellent one in many respects, although now nearly forgotten, passed through five editions, was translated into German, and republished twice in America. Underwood's work was, we know, in existence before Evanson and Maunsell's; but we desire to show that Dublin should have its share in the credit of initiating the regular, the methodical, and the tscientific study of infantile diseases by the establishment of a Children's Hospital, and of contributing one of the earliest systematic treatises on their diseases to medical literature.

Any criticism on Dr. West's work—which we have already termed a classical one—is unnecessary. In reading it through again in this edition we more than once felt inclined to compare it in style and in general excellence with Watson's famous Lectures on Physic. Those familiar with the latter will say that this is high praise; but it is, we believe, deserved. Here we have placed before us the experience of a man for forty-five years engaged in the study of diseases of children. And it is not the least valuable feature of this, the seventh edition, that the conclusions of his mature age, as given in it, often differ from the judgment of his younger days. In other cases, however, this is not so; for as he eloquently and candidly says himself, speaking as to the treatment of chronic tubercular meningitis:—

"Looking over, at the end of more than forty years, what I wrote, and have but little altered, I cannot but ask myself what more I have learned since then; whether I have gained the use of new weapons, or

whether I wield the old ones with greater skill than heretofore? I fear that I cannot profess to do either. . . . Still, one sees the danger further off, and foretells the inevitable sorrow earlier and more surely than in former years, but that is all."

Although this is written of a particular case, it must not be taken that such a knowledge is to be decried, or to be looked upon as a check to further efforts. Dr. West, we are sure, would be the last to wish such a construction put upon his statement. Indeed in the disease in point he indicates a means whereby a modern scientific discovery may, in experienced hands, throw light on the best prospect of doing good.

Notwithstanding that "our therapeutics often lag sadly behind our pathology," Dr. West is not slow to avail himself of some of the recent additions to our resources. Other therapeutical measures in vogue, however, he only refers to, having had no personal experience of them. The recommendation by such an authority of antimonials, mercurials, and blood-letting in certain acute sthenic affections in which such remedies are not now generally employed, deserves to be mentioned, if not with approval, at least with respect.

The chapters on diphtheria are, in our opinion, the best in the volume. Dr. West now believes in the identity of membranous croup and diphtheritic croup. He describes the disease under three forms—a mild form; when the air passages are involved; and a malignant or septic form—and nothing can exceed the accuracy of his portraiture. He points out the tendency there exists in this affection to nocturnal exacerbations and morning remissions, and emphasises the strikingly suggestive early symptom we have also noted of a child who at bed-time was supposed to have a slight cold, awakening suddenly with ringing cough and stridulous breathing, frequently in a state of alarm, and with marked dyspnœa. In the treatment of diphtheria Dr. West trusts chiefly to emetics and mercurials, and keeping the patient in a warm moist atmosphere. He administers the mercury in the form of calomel—half a grain to one grain doses every hour, in children from two to five years old—and, in addition, by inunction. If no result follows this use of the drug, continued for twenty-four or thirty-six hours, and if the emetics cease to relieve dyspnœa, by detaching false membranes, and only purge, then, he says, "perform tracheotomy at once."

Although there are many omissions in Dr. West's work, and although many subjects are treated of in a general way, and without that attention to diagnosis and treatment which characterises Dr.

Eustace Smith's treatise, it is a work of such recognised value and merit that it will long occupy a position of the first importance in the literature of the subject. Of the many items of wise counsel and sound advice that may be gathered from its pages, we commend the following sentences, with reference to care in diagnosis, to the attention of our readers:—

"Something, indeed, of the probability of your coming to a correct conclusion depends on the habits of your own minds. If you are restless hunters after curiosities, or vain and self-conscious, anxious in every case to signalise yourselves by the display of your wonderful ingenuity, you will be very likely to make mistakes. Let me advise you, if you would escape from error, always to credit the practitioner in whose care the patient has previously been, and with whom you may be called to consult, with the possession of common sense, and common powers of observation. Do not listen to his statements as if you were the opposing counsel, and as if it were your business to find every argument that can be adduced against his opinion. Remembering too, that as a mere question of chances, the more frequent the disease, the more likely it is that on any occasion you will meet with it; that you are bound, therefore, first to disprove the common, before you are justified in looking out for the rare. Forgive my saying this. I am but using one of the privileges of age. Every day I am struck, more and more, with the degree to which simplicity of mind helps in arriving at a correct diagnosis, as well as in leading to the adoption of right treatment, and I have, therefore, ventured to warn you against a fault which is especially that of the young, the ingenious, and the accomplished."

Dr. Eustace Smith's book comes before the profession stamped with the high reputation its author has already earned as the writer of two admirable monographs on certain infantile diseases. It differs from Dr. West's work in being more comprehensive—as its title implies—and more concise. Consequently it will be found more generally useful to the practitioner and student, as well as more in accordance with the teaching and practice of the present day. As one would expect from previous acquaintance with the author's writings, the details of general management, special dietetics, and treatment, are given with great completeness and judiciousness; and the sections on pathology are also full and accurate. A large number of practical points, evidently the outcome of large experience and careful observation, are to be found throughout the volume. Thus, in an excellent introductory chapter, reference is made to the pyrexia which sometimes attends

rapid growth. Dr. Eustace Smith says that several cases have come under his notice in which growing girls were exciting great anxiety by a persistent evening temperature of over 100°, but in whom there was nowhere any sign of disease or real cause of alarm. Again, in speaking of scarlet fever, he shows that, although early elevation of temperature is a characteristic initial symptom, yet that it is important to remember that the increase of bodily heat may at first be very moderate—for example, only one degree above the normal on the second day. Also, that in cases of hyperpyrexia, children often bear high temperature very well :—

"Here it is difficult to lay down a broad rule as to the period at which it is necessary to intervene. It is better to be guided in this respect by the general symptoms than by the thermometer. If, as often happens, a child seems comfortable and composed with a temperature of 105° or 106°, there is no occasion for any step more energetic than that of sponging the surface of the body with warm water; but if with a lower temperature (103° or 104°) he is delirious, agitated, and distressed, the cold bath may be used with benefit."

In corroboration of other observers, Dr. Smith calls attention to the fact that scarlet fever may be closely simulated by ague; and, curiously enough, that arsenic seems to be a remedy of some value as a prophylactic against the former disease.

As a symptom of a purulent change in the fluid of a pleural effusion in children, Dr. Smith has noted that the colour of the face often assumes "a peculiar straw yellow hue which is unlike the complexion of any other disease." In croupous pneumonia he indicates a peculiarity in the physical signs of the disease, the occurrence of which we can corroborate—that is, that unless the apex of the lung is affected, the physical signs are usually confined to one aspect of the chest. "If they are detected at the posterior aspect, the signs are normal in front; while inflammation of the anterior part of the lung produces no alteration of resonance or respiratory sound at the back of the chest." The occurrence of nocturnal incontinence of urine as occasionally the only indication of true epileptic attacks in the night is noted; and the efficacy of quinine in the rapid cure of chronic urticaria, and in "eczema infantile," when the disease is very acute and the skin red and intensely irritable, is also pointed out.

In noticing these features in Dr. Eustace Smith's valuable work, we have left ourselves but little space to speak in commendation

of the arrangement of its matter and the clearness of the author's style. Illustrative cases are frequently introduced, and, instead of wearying the reader, add to the excellent picture of the disease presented to him by their terseness and lucidity—in fine, this work is entitled to rank with any of those we have mentioned, as well as with the standard treatises of Vogel, Lewis Smith, and Meigs and Pepper; and we shall be surprised if it will not now be looked upon as the favourite and standard work on the subject.

The Elements of Physiological and Pathological Chemistry: a Handbook for Medical Students and Practitioners. By T. Cranstoun Charles, M.D. London: Smith, Elder, & Co. 1884. Pp. 600.

For many years we had no work in English which treated in detail of physiological chemistry, with the exception of Simon's "Animal Chemistry," translated and edited for the Sydenham Society (1845) by Dr. G. Day, who, fifteen years later, published an independent work on "Chemistry in its Relations to Physiology and Medicine." But the growth of modern physiology has been so amazingly rapid and notable, and its points of contact with chemistry are so many and intricate, that it has become almost a necessity to issue special manuals on physiological chemistry as supplements to the ordinary treatises on general physiology. Physiological chemistry, it is true, represents only a partial aspect of physiology, and cannot be properly studied with advantage apart from it. An accomplished physiologist must needs have a sufficient knowledge of the science and art of chemistry, while, as we all know, a wide and accurate knowledge of chemistry is attainable without reference to physiology. But it must also be maintained that there is no such thing as the possibility of gaining a satisfactory acquaintance with so-called "clinical" or "medical" chemistry, except through a sound fundamental knowledge of chemical science, inorganic and organic, as taught by a competent teacher in a well-equipped laboratory. Armed with this knowledge—still, alas, rather uncommon—the student will find little difficulty in applying it to the elucidation of pathological conditions; without it he will but aimlessly grope in the dark, even though aided by special manuals. Of such text-books we have now several by English writers—viz., Gamgee, Ralfe, and Charles. Ralfe's manual, noticed in this Journal last year (May, 1884), was

of modest scope, and fairly fulfilled its object. The work now under review is a more ambitious effort, and, to judge only from the somewhat inflated title-page—too long for insertion—attempts to cover the whole field of physiological and pathological chemistry.

Although put forward as a handbook for medical students and practitioners, we imagine it is rather beyond the requirements of the great majority of the former class, and among the latter it will be welcomed chiefly by those who desire to keep abreast of scientific progress, and to avail themselves of every possible aid to clinical study. The author arranges his material under four main heads—viz.: Nutrition and Foods; Digestion and the Secretions concerned; Chemistry of the Tissues, Organs, and remaining Secretions; the Excreta: the fæces and urine. The urine is justly treated with considerable detail, nearly one-third of the volume being devoted to its examination. In the syllabus of practical work, with which the book concludes, a course of instruction is indicated which may be pursued, more or less completely, with great advantage by the student.

Taking a general survey of the book, it will be found to contain a large mass of information, presented in an easily accessible form. The work bears the impress of the author's industry, and of his practical experience as a teacher of physiology, and will doubtless serve to familiarise many with the results of recent investigations in physiological chemistry. Still, it lacks the flavour of originality, and leaves an unsatisfied feeling upon the mind of the reader; and we look in vain for that *critical* digestion of facts and observations which is so desirable in the discussion of the quickly changing *data* of animal chemistry. In the list of works to which Dr. Charles expressly acknowledges his indebtedness in the preface, we miss the *Zeitschrift für physiologische Chemie*, and that the omission is not merely accidental we gather from indications in the text that he has not made good use of its contents. To take one instance—At p. 132 Dr. Charles states, on the authority of Eichwald (1866) and Scherer, that dry mucin contains no sulphur, whereas Landwehr (*Zeitsch. f. phys. Chem.*, 1881, p. 371), in confirmation of Hammarsten's statement, shows that mucin, either from the bile or submaxillary gland, contains an appreciable amount of sulphur, varying from 0·45 to 1·1 per cent.

The chemical statements are sometimes curious enough. Thus, p. 2:—"Prepare chlorine gas by gently warming some black oxide of manganese with strong sulphuric acid in a small retort, and

pass the gas into water to saturation." This is probably a mere slip, as the succeeding paragraph would indicate; but on the next page the student is told that sulphuretted hydrogen is to be prepared by the action of dilute sulphuric acid upon *ferric* (!) sulphide. In nomenclature, too, it is inexcusable to muddle the terms hydrocarbon and carbohydrate. Chapter IX. is correctly headed—"Chemistry of the Carbohydrates" (sugars, starches, &c.), while in Chapter XXXI. the student is confronted in the practical course with the tests for hydrocarbons (*sic!*), including starch, dextrin, glycogen, grape sugar, and *fats!*

We hope no one will follow the author in calling pyrocatechin in some places by its German name, *brenzcatechin*, without any intimation of synonymy (*e. g.*, p. 479); and we should be glad to know upon what authority this statement is made (p. 480):—"In the urine of old people *alcohol* is always present in small proportion." The section on urine, indeed, is not altogether satisfactory, and we do not get a connected, intelligible account of the numerous and interesting observations which have been made within the past seven or eight years upon the physiological relations of the "aromatic" series of compounds.

We need not multiply other illustrations to show that the book should be read with caution, and we trust that the author will soon be afforded an opportunity of producing a revised and improved edition to take its place as a standard work of reference.

W. G. S.

A Text-book of Human Physiology, including Histology and Microscopic Anatomy; with special reference to the requirements of Practical Medicine. By Dr. L. Landois. Translated from the Fourth German Edition, with additions, by William Stirling, M.D. Vol. I. London: Charles Griffin & Co. 1885. Pp. 514.

The scope of this work is best given in the following extract from the translator's preface:—

"The fact that Professor Landois' *Lehrbuch der Physiologie des Menschen* has already passed through four large editions since its first appearance in 1880, shows that, in some special way, it has met the wants of students and practitioners in Germany. The characteristic which has thus recommended the work will be found mainly to lie in its eminent *practicality;*

and it is this consideration which has induced me to undertake the task of putting it into an English dress for English readers.

"Landois' work, in fact, forms a *Bridge* between physiology and the practice of medicine. It never loses sight of the fact that the student of to-day is the practising physician of to-morrow. Thus, to every section is appended—after a full description of the normal processes—a short *résumé* of the pathological variations, the object of this being to direct the attention of the student, from the outset, to the field of his future practice, and to show him to what extent pathological processes are a disturbance of the normal activities.

"In the same way, the work offers to the busy physician in practice a ready means of refreshing his memory on the theoretic aspects of medicine. He can pass *backwards* from the examination of pathological phenomena to the normal processes, and, in the study of these, find new indications and new lights for the appreciation and treatment of the cases under consideration.

"With this object in view, all the methods of investigation which may with advantage be used by the practitioner, are carefully and fully described; and histology, also, occupies a larger place than is usually assigned to it in text-books of physiology."

A work such as this, dealing not only with physiology, but with histology and general pathology, must necessarily be a large one; and in the part before us we have a goodly volume, in large octavo, of five hundred pages, handsomely bound, clearly printed, and profusely illustrated with well-executed engravings.

After a short but well-written introduction, dealing with the scope of physiology and its relation to other branches of science; the conservation of energy; the relations of plants and animals, &c.; we have the following subjects fully considered:—The blood and circulation, respiration, digestion, absorption, animal heat, and metabolism, including a general view of the chemical constituents of the organism. In the consideration of each of these subjects the most recent condition of science is represented, and, while prolonged controversies are avoided, the different views which are current in disputed points receive their due recognition. At every step we find pointed out the bearing which the teachings of experimental physiology have on the phenomena of disease and on its treatment.

Of the work of the translator we can speak in the highest praise. He has avoided too literal an adhesion to the original text, and, while its sense is always conscientiously given, the sentences have none of that awkwardness too often met with in translations, but read like those of a well-written English work. Professor Stirling

has, besides, done much more than translate; his additions to the text are both numerous and valuable, and, being enclosed in brackets, we have the advantage of knowing when we are reading the work of the author and when that of the translator—an advantage which is not to be met with in some other translations which we have recently noticed. Furthermore, seventy additional figures have been added to those in the original. The work is thus Landois' Physiology and a good deal more, and is, in our opinion, a really valuable addition to English medical literature. We cannot too strongly recommend it to all those who wish to feel the firm ground of experimental science under their feet, when wading through the perplexities and uncertainties which too often lie in the way of such as are called on to study and treat pathological processes.

A Romance of War; or, How the Cash goes in Campaigning. Compiled from evidence given before the Select Committee on the recent Egyptian Campaign. By Charles Cameron, M.D., LL.D., M.P. London: Baillière, Tindall & Cox. 1884. Pp. 43.

If Arabi in his comfortable exile, and the Mahdi in his active and successful military career, ever care to unbend and while away an hour over infidel literature, we can recommend them this shilling's worth as sure to amuse, even though filtered through translation or interpretation. We are not so certain that income-tax payers will see the fun. There has not been such an exposure of administrative waste and muddling since the Crimean War, as the evidence given before the Select Committee on the first Egyptian campaign, and not yet (we believe) published in full, constitutes. A correspondent of *The Times*, evidently officially inspired, having had the temerity to assert, while professing to sum up the evidence which had been given, "that with regard to failures in the working of the supply and transport services at the seat of war, the evidence seemed to show that there was none," and that "it seemed manifest that the expedition as a whole was, from a purely administrative point of view, a success," Dr. Cameron felt constrained to publish, in an easily accessible form, some samples of War Office administrative successes. Of these we shall content ourselves with noticing one or two, referring our readers to the pamphlet itself, and promising them instruction and somewhat bitter amusement from the perusal.

Hay and Erbswurst will answer our purpose as well as any of the numerous examples to be found in Dr. Cameron's pages. An army

contractor in Liverpool—his name is given in the evidence—sold 2,372 tons of "best upland meadow hay" for £20,592, nearly £8 14s. per ton, of which, 1,099 tons was sent out for the horses of the English force. The Commissary-General did not see a truss of this hay that was not more or less "damaged." His successor stated that hundreds of the bales "were filled with outside wrappers of hay, and that he saw issued bales containing pieces of bricks, stones, rubbish, and refuse straw rolled up into hard lumps." At Ismailia lumps of clay, and roots "weighing as much as a pound and a half," were found in the "hay;" in some trusses the "hay" was "old twist ropes from other trusses." The principal veterinary surgeon, in intemperate language, described it as of "the most infamous quality," and as being to a considerable extent "the wiry pliable sort of hay used at home for packing china in hampers." The Indian contingent got 526 tons for their cattle. The British Government, which had supplied it, refused to take back 150 tons which remained at the close of operations; it was *then* "water-meadow hay of a very inferior description." 556 tons which were stored in Liverpool were condemned, and sold for £2 11s. 6d. per ton, after cost of storage for some months had been added to the original price. Of course the contractor was prosecuted, or at least discredited? By no means. He cleared £3,500 on the hay contract; he got £1,564 "compensation" for the cancelling of another contract in consequence of the capture of Cairo; he was complimented by the Director of Contracts, who told him "they were all exceedingly obliged to him for the manner in which he had met the service;" and so lately as last June he held contracts worth £1,200 a month.

Erbswurst (which is misprinted in the pamphlet) is, we need scarcely explain, the pea-sausage of the German army, "which each German soldier is compelled to carry, which he is permitted to consume only on an emergency, and by order of a superior officer, and which if he makes away with he is liable to be shot." Following the Germans in nomenclature, as in use of the article, the British soldier calls the sausage the "iron ration." 9,300 lbs. of erbswurst were sent out in tins for the use of the expedition. They did not reach Egypt until the 8th September; and when they did, they were sent on to Suez; so that they were not issued until the force was in occupation of Cairo, and had no need of them. Of the 9,300 lbs. only 4,445 lbs. were found fit for use; the other 4,855 lbs. were so damaged, through faulty packing, that they were condemned.

In an Appendix, relating to the Afghan War, Dr. Cameron adduces ample evidence for the Anglo-Indian belief that Indian military administration has not improved since it passed from the hands of the East India Company into those of the British War Office. The muddling and reckless waste of the Afghan War could not, it would seem, have been exceeded if it had been mismanaged in London instead of in Simla. But what will appear most extraordinary and even ridiculous, to Anglo-Indians, in Dr. Cameron's remarks on this subject, is the point of view from which he regards the extravagantly wasteful expenditure. Indians, of all creeds and colours, were disposed to consider it a monstrous injustice that they should have been compelled to pay fifteen millions of the twenty of the cost of a war which had been undertaken by the Home Government for objects purely European, and the direction of which had been entrusted to the feeblest mind that ever ruled the Indian Empire. Dr. Cameron is aggrieved because the whole of the £20,000,000 was not extorted from the Indian tax-payer! Whoever had to pay, the waste was enormous and the mismanagement gross.

Sanitary Protection. By W. Kaye Parry, M.A., Bac. Eng., Dubl. Univ.; Examiner in Sanitary Engineering, K.&Q.C.P.I.; Engineer to the Dublin Sanitary Association, &c. Dublin: John Falconer. London: E. & F. Spon. 1885. (Illustrated.)

Under the above title, Mr. Kaye Parry has published the substance of lectures delivered at the request of the Dublin Sanitary Association in 1884; the introductory lecture of the course being given by Captain Douglas Galton.

In the first lecture, the Principles of Sanitation are dealt with, as they bear on the removal of sewage by water in the public sewers and in house drains; the shape and size of sewers and drains, and the general question of traps being considered.

In the second lecture the subject of Practical Drainage is taken up. Amongst other points Mr. Kaye Parry mentions in detail the evils of jointing the pipe-lengths joining the house drain to the street sewer, with clay. We believe that the Dublin Corporation workmen always used clay for this purpose, until a discussion took place in the engineering section of the recent Sanitary Congress, in which the evils of the plan were fully exposed. A useful suggestion is made that the Corporation should make the connexion with the street

sewer *before* the house drain is laid; this would enable the engineer to secure the maximum amount and best distribution of fall, and would render it impossible for joints to be started or pipe-lengths fractured by injudicious handling, as sometimes happens when the spigot end is raised to allow the lower rim of the socket to be introduced under it.

In the third lecture Sanitary Plumbing is discussed. Mr. Kaye Parry considers that the closet of the future will be of the "wash-down" type, but he does not mention the "anterior outlet wash-down," now made by many firms, and which seems to fulfil all his desiderata.

An Appendix contains a Specimen Report on the Sanitary Condition of a House, and is a useful guide to the best method of examining the drains and water-supply. The drawings are clear, and fully illustrate the text; the sketches in the report showing the discovered condition of affairs, and the proposed alterations, will be found especially useful.

Ellis's Irish Education Directory and Scholastic Guide for 1885. Edited by Wm. Edward Ellis, B.A., LL.B. (Dubl.), Barrister-at-Law. Dublin: E. Ponsonby. 1885. 8vo. Pp. 400.

We have received an advance copy of the fourth annual issue of this work, which has been much enlarged by the incorporation of the "Irish Education Guide and Scholastic Directory" with Mr. Ellis's "Irish Education Directory." The book now consists of some 400 pages, and contains full and generally accurate information as to the Irish Universities and Professional Schools, the institutions in Ireland for promoting Intermediate, Technical, and Primary Education, and complete alphabetical lists of the Irish Colleges and Schools.

To the present issue, a copious alphabetical Index has been added, which will much enhance the value of the work by facilitating reference to its contents. In the appendix a large amount of useful and interesting information is included as to the special attractions of the Irish, British, and Continental institutions, of which the prospectuses will also be found there.

The information relating to the Colleges of Physicians and Surgeons in Ireland, the Apothecaries' Hall, and the Pharmaceutical Society of Ireland, is very complete, and the regulations for admission to Degrees in the Faculty of Medicine, both of the University

of Dublin and of the Royal University, are given at length. Thus the work must prove of the greatest use to medical students and their private teachers. By some mischance, the obsolete regulations relating to the certificate in Sanitary Science granted by the King and Queen's College of Physicians are incorporated with the text, instead of the existing Regulations, in accordance with which the qualification is obtainable after examination by any Registered Medical Practitioner.

The Directory has been printed at the University Press by Messrs. Ponsonby and Weldrick, in excellent style, and is published in two editions, one bound in boards, costing half-a-crown, and the other in fancy cloth, price three shillings.

The Year-Book of Treatment for 1884 : *a Critical Review for Practitioners of Medicine and Surgery.* London, Paris, and New York: Cassell & Co. Pp. 316.

This little work fulfils the promise of its preface—"to present to the practitioner not only a complete account of all the more important advances made in the Treatment of Disease, but to furnish also a review of the same by competent authorities." It is corrected only up to the 30th September, which, perhaps, accounts for the omission of the newest panacea—cocain. To men who have been in the profession for thirty years or more, in whom hopefulness is preserved from exuberance by remembered experience, three hundred pages of therapeutical novelties, warranted by sanguine inventors and discoverers, are apt to provoke a somewhat sardonic smile. The arts of healing do advance, however, and we cannot doubt that some of these "improvements" will hold their ground in the struggle for existence. Twenty-three gentlemen, of whom only one (Dr. Walter G. Smith) appears to belong to this island, have contributed to the compilation, and the work has been well done. Dr. Smith's share is a Summary of Therapeutics of 1883–84; and the book is concluded by two Indexes—one of authors, the other of subjects.

De la Cirrhose Alcoolique Graisseuse. Par le Dr. H. Gilson. Paris: J. B. Baillière et Fils. 1884. Pp. 89.

This interesting little study illustrates very fairly the subject of which it treats, and has appended to it a bibliography which refers to most of the works of those who have written upon the subject.

PART III.

HALF-YEARLY REPORTS.

REPORT ON
MATERIA MEDICA AND THERAPEUTICS.[a]

By Walter G. Smith, M.D., Univ. Dubl.; F.K.Q.C.P.; King's Professor of Materia Medica, School of Physic, Trin. Coll. Dubl.; Physician to Sir Patrick Dun's Hospital.

Art. 2. Amyl Nitrite.
„ 6. Arnica, eruption from.
„ 1. Aseptol.
„ 3. Caffein.
„ 11. Cocain.
„ 4. Escharotics, painless.
„ 5. Papain.
„ 7. Potassium iodide.
„ 10. Thallin.
„ 9. Tonsillitis.
„ 8. Vaselin.

1. *Aseptol.*—Under this name M. Armeessens proposes for trial a succedaneum to carbolic and salicylic acids, over which bodies it possesses the advantage of being readily soluble in all proportions in water. It is a viscous liquid, slightly reddish in colour, specific gravity about 1·450, and with an odour resembling that of carbolic acid, but feebler.

It is said to possess all the chemical and antiseptic properties of phenol and salicylic acid, and may be given internally in doses intermediate between those of these compounds, without risk of irritant or injurious effects. Dissolved in water, in the proportion of even one in a million parts, it manifests valuable antiseptic

[a] The author of this Report, desirous that no contribution to the subjects of Materia Medica and Therapeutics should remain unnoticed, will be glad to receive any publications which treat of them. If sent to the correspondents of the Journal they will be forwarded.

qualities, and promises to be of great service in hospitals, schools, &c., and, in short, wherever we wish to destroy morbid germs in the air.

Chemically, it is a well-defined compound, and boasts of the technical title of orthoxyphenylsulphurous acid, C_6H_4,OH,SO_2OH. The formula, as will be seen, is parallel to that of salicylic acid, $C_6H_4,OH,COOH$.—(*Répert de Pharm.*, 6, 1884, from *Journ. de Pharm. d'Anvers.*)

2. *Amyl Nitrite, administration of.*—Dr. B. W. Richardson recommends the following formula for internal use in asthma, &c.:—

℞. Amyl nitrite, - - ♏xxxvi.
Ethylic alcohol, - - ʒvi.
Pure glycerine, to - - ℥iss.
M.

Dose, a teaspoonful in ℥ ij. of warm water; swallow slowly, and repeat every two or three hours.—(*Asclepiad*, 1884.)

3. *Caffein.*—Although caffein has been used and favourably spoken of by Continental physicians for nearly twenty years, it seems to have been very little used in this country until comparatively lately.

Chemistry.—Caffein is a crystalline substance obtained from coffee seeds, but found also in several plants of different natural order—viz., tea, Paraguay tea (*Ilex Paraguayensis*), guarana (*Paullinia sorbilis*), kola nuts (*Sterculia acuminata*), and cocoa. It is most easily prepared from coffee seeds, being volatilised in considerable quantity during the process of roasting coffee. It is neutral to test-papers, but forms compounds with acids, which are easily decomposed by any solvent which more readily dissolves the acid than the caffein. Tanret, indeed, goes so far as to say that neither acetate, citrate, lactate, nor valerianate of caffein exists as a salt. The mineral acids, such as hydrobromic and hydrochloric, form definite crystalline compounds with caffein, but they are decomposed by water, which removes the acid. The sulphate is crystallisable only with difficulty. Tanret has, however, devised some double salts which are sufficiently soluble to be capable of use in the form of subcutaneous injection. Of these the cinnamate of sodium and caffein and the salicylate of sodium and caffein are the most satisfactory for use in medicine. Caffein is soluble in 93 parts of water, but solution of cinnamate of sodium will dissolve 48·8 p.c. and the salicylate 61 p.c. of caffein. Caffein is

remarkable for containing more nitrogen than any other alkaloid at present known. Chemically it is considered as dimethyl-xanthin, while theobromin is trimethyl-xanthin. It crystallises in fine silky needles, is soluble in 25 parts of rectified spirit and in ether, but is insoluble in absolute alcohol.

Physiological Action.—On small animals caffein exerts a poisonous action, producing first spasm and then paralysis. One grain of it injected into the veins of a small dog was found sufficient to destroy its life; but thirty grains produced in a larger one only salivation, muscular rigidity, exhaustion, hurried breathing and defæcation. Full doses produce hyperæsthesia, with exaggerated reflex irritability, the heart and pulse beating more frequently, but gradually decreasing to the normal rate, or even lower. It does not, however, produce any marked hyperæmia of the spinal cord. On healthy persons the action of caffein has been found to vary considerably; by the same dose some are scarcely affected at all, others suffer from palpitation of the heart, a full, frequent, or irregular pulse, irritable bladder, trembling limbs, and sleeplessness. In one person a drachm of citrate of caffein, taken by mistake for the effervescing citrate, caused in about an hour a burning sensation in the throat, giddiness, vomiting, purging, and abdominal pain; subsequently, general paresis with tremor, followed by collapse, the mind remaining clear. Its commonest effect is to excite muscular and mental activity at the subsequent expense of the spinal functions. According to Dr. M. P. Jacobi, the amount of blood circulating in the brain is lessened, but it is brought to the nerve tissues under increased pressure. Careful experiments have shown that caffein increases the secretion of urine, but diminishes its solid constituents, except the fixed salts, and that the proportion of carbonic acid breathed out under its use is decreased. It therefore appears to restrain waste of tissue.

Therapeutical Uses.—Dr. N. Nelson Hardy has recently directed attention in *The Lancet* (January 24th, p. 188) to the value of caffein in cardiac debility. In three cases, two of which resulted from a recent attack of rheumatic fever, the improvement resulting from the use of caffein was most marked, the heart's action being steadied and strengthened, and the vascular tension augmented. The doses given were two grains, three or four times a day; a dose in one case, however, taken as late as eight o'clock, p.m., caused sleeplessness for seven hours. Mr. E. H. Saunders, R.N., subsequently (*Lancet*, Jan. 31, p. 238) describes three cases in

which caffein proved useful in headache, in one of which the pain arose from injury received by falling twenty feet, and continued for two months, after which caffein speedily caused the headache to subside, and rendered normal the heart's action, which had previously been increased in frequency and impulse. Caffein appears to be most useful in those cases where there is congestion of the cerebral capillaries, such as would be produced by alcohol and opium, &c. It has been found useful in obstinate hiccough and in spasmodic asthma, in chordee, dysuria, and nervous headache. It has also been found of service in strangulated hernia, apparently by exciting contraction of the intestinal muscles. In post-partum hæmorrhage and in menorrhagia it has also been found useful. In cardiac dropsy it has been known to produce copious diuresis, even after digitalis has ceased to have any effect. In cases in which dropsy is not due to cardiac disease it is less effectual.

Preparations and Doses.—The dose of caffein is one to five grains, two grains being the usual dose; as much as eighteen grains have, however, been given. Of the so-called citrate and the hydrobromide the dose is one to five grains, and of the effervescing citrate a teaspoonful, which contains one grain. The valerianate is given in doses of one to three grains. For hypodermic injection one to six minims of a solution containing one grain in three minims is used. The solution recommended in the "Extra Pharmacopœia" is made as follows:—Caffein, twenty grains; salicylate of sodium, seventeen and a half grains; distilled water, one drachm.—(*Midland Med. Miscell.*)

4. *Painless Escharotics.*—From the *St. Louis Druggist* we learn that Esmarch's painless caustic powder, for the removal of warts, tumors, &c., is composed of:—

℞. Arsenious acid, part 1.
Sulphate of morphia, part 1.
Calomel, parts 8.
Powdered gum arabic, parts 48.

This is to be sprinkled on the cuticle daily. The surface should be denuded either with the knife or a blister. Canquoin's paste, for the same purpose, is made, according to M. Charles, by the following formula:—

℞. Chloride of zinc, fused, parts 10.
Alcohol, 60 deg., parts 2.
Wheat flour, parts 15.

Rub the zinc chloride to a fine powder, add the alcohol, rub again and incorporate the flour, strongly pressing with the pestle. As soon as the paste is homogeneous, spread with a roller or bottle into sheets about one-eighth of an inch thick, and after a few hours put into a well-corked bottle.

Latour's nitro-chloride of zinc paste—a most excellent escharotic—is made by dissolving 50 parts of chloride of zinc and 100 parts of nitrate of zinc in 80 parts of water. The solution is made by the aid of heat. When it cools, add to each 100 parts of the fluid, 75 parts of wheat flour, and incorporate as in Canquoin's paste.—(*Therapeutic Gazette*, from *Medical and Surgical Reporter*, July 12, 1884.)

5. *The Action of Papayotin and Papain.*—According to Professor Rossbach (*Zeitschr. f. k. Med.*, vi. Bd., 6 Heft, 1883), the *Carica papaya*, or papay tree, N. O. Passifloreæ, is a native of South Africa, but is cultivated also in other tropical countries, and can be raised elsewhere in hot-houses. Its wood, leaves, and berries contain a great abundance of milky juice, which flows freely from an incision in the trunk, and hardens on exposure to the air. From this juice is obtained, by precipitation with alcohol, that peculiar digestive ferment which Wurtz and Bouchut have denominated papain. It has been shown by these experimenters that a given quantity of papain is capable of dissolving one thousand times its own weight of moistened fibrin, almost the whole of which it transforms into a peptone, and that its digestive action is similar in all respects to that of natural pepsin. It is also proved that this liquefaction of fibrin is in no degree due to the bacteria which are propagated with great rapidity in the papain solution.

Professor Rossbach has found:—1. That hot, concentrated solutions of papayotin exert their solvent powers no more speedily than cold ones. 2. That the flesh of newly-killed rabbits, when placed in a five per cent. solution of papayotin, becomes soft and sometimes quite disintegrated, in half an hour, while pulmonary tissue, on the contrary, is scarcely acted upon, and living mucous membrane is not in the least affected. 8. That very weak preparations possess but little solvent power; hardly any perceptible effect is produced by a one-half per cent. solution. The digestive energy of papayotin is lessened by the addition of either hydrochloric acid or phenol, but is not entirely destroyed even when these agents are used in the proportion of four per cent.

The following points have been established bearing upon the thera-

peutical applications of this remarkable substance:—1. Papayotin, when taken internally, is entirely harmless. 2. For subcutaneous injections only a sterilised solution should be employed, and this always in very small doses. 3. When thrown directly into the circulation, papayotin acts as a powerful poison by paralysing the heart and nervous centres.

The following are the diseased conditions for which papayotin has so far been recommended:—*a.* Various cutaneous eruptions, including lichen tropicus; in these affections its efficacy has not been tested by Rossbach. *b.* It has been employed to dissolve external carcinomatous tubercles. *c.* In diphtheria, and for the resolution of croupous false membrane. Koths and Aschbach report favourable results from papayotin in fifty-three cases of diphtheria. In bad attacks of croup, Rossbach advises that a solution of papayotin, made as strong as possible, be kept in constant contact with the exudation by painting it over the latter, and also dropping it into the nose and mouth, every five minutes. *d.* Papayotin has been employed in France to assist the digestion of meat in cases of dyspepsia and other gastro-intestinal disorders. Dr. Albrecht has prescribed it successfully for various complaints of the stomach and bowels in children. Vomiting and indigestion are said to be very quickly relieved by small doses. Rossbach believes that papayotin, given by the mouth or in nutritive enemata, is especially serviceable when there is a deficiency of the normal gastric juices. *e.* Probably the solvent powers of this agent will yet be made available in many gastric carcinomata. *f.* Descourtily and Tussac report that the juice is an effectual vermicide.—(*Therapeutic Gazette*, from *New York Medical Journal.*)

6. *Eruption from Arnica.*—Patient, a baker, aged forty-two; skin white and delicate; no previous cutaneous disease; since 1870 has had two attacks of rheumatism in the small articulations.

December 4, 1883, in consequence of falling against a door-post, he sustained a slight contused wound, which bled a few drops, on the outer portion of the left superciliary ridge. He first made use of cold-water compresses; then, in order to keep down the swelling, he procured at a drug-store some tincture of arnica, which he applied several times in the course of the evening. Next day, the affected region being a good deal swollen, he went again to the druggist, who gave him a compound of bran-water and arnica tincture, probably in equal proportions.

I first saw him on December 6. The face, clean shaven with the exception of a moustache, was enormously swollen; the skin of the forehead and of the cheek on the injured side was bright red and covered with phlyctenæ, from some of which issued an abundance of clear, lemon-coloured fluid; the left eye could not be opened, and the aperture of the lids was almost hidden by the tumefaction. The rest of the face was similarly affected, but in a less degree; the redness faded away at the neck, where some small vesicles gave the skin a roughened appearance; the hairy scalp was untouched. Temperature in the axilla, 37·4° C. Pulse, 70. Next day the œdema had fully extended over the right side of the face, and both eyes were completely closed. Submaxillary glands swollen on both sides. Loss of appetite. Urine scanty and high-coloured.

December 8.—The swelling and phlyctenæ had mostly passed over to the submaxillary region and the neck; the left eye could be opened a little. Some restlessness, but no fever. Slight dysphagia, without inflammation of the pharynx.

December 9.—General improvement; both eyes open; œdema, however, still continues.

December 12.—The vesicles are succeeded by yellowish scales; œdema has disappeared; patient comfortable.

December 22.—Skin still red; desquamation not quite completed; general condition excellent.

Treatment consisted in washing off the tincture of arnica, and applying a liniment of oil and lime-water, as in cases of burns. This gave more relief than the bran-water poultices. A saline purgative was previously administered, the tongue being somewhat foul.

The above-described affection bore a strong resemblance to facial erysipelas, in the œdema and erythema of the skin, in the abundant phlyctenæ, and in the swelling of the adjacent glands. It differed chiefly in being accompanied by complete apyrexia, and in its exact localisation at the contaminated points.

Other prominent features in the case were the dysphagia, caused by tension of the swollen cervical tissues, the pharynx being unaffected, and the scanty urine, of a mahogany colour, like that of an icteric patient.—(Cartier, *Lyon Médical, Journal of Cutaneous and Venereal Diseases*, Sept., 1884.)

7. *Iodide of Potassium.*—Dr. E. C. Seguin is convinced that the use of potassium iodide in *very large* doses, under certain indications, represents a marked gain in therapeutics, and he claims

Dr. W. von Buren as the original promoter of this plan. By large doses he means 200 or 300 grains *per diem.*

These extreme doses have been found by competent observers (*e.g.*, Bumstead and Taylor, Buzzard, &c.) to exercise wonderful curative influence over severe syphilitic symptoms and lesions, and some authorities teach that the drug should be pushed to the limit of the patient's endurance of it.

The iodide should be administered largely diluted in simple water, in a feebly alkaline water, or in milk. Dr. Seguin disputes the correctness of the usual rule of giving the drug "after meals," or "on a full stomach," and recommends, on the contrary, that it should be given on an empty stomach, say about half an hour before meals. As the results of experience of this method, he rarely meets with iodism, and gastro-intestinal irritation is almost unknown. Dr. Seguin also thinks that iodide of potassium is far too sparingly used with children. In cases of basal meningitis, *e.g.*, he has given from 60 grains to 120 grains three times a day to patients between four and eight years old, not only with good result as regards the cerebral symptoms, but also without iodism or gastro-intestinal disturbance.—(Reprint from *Archives of Medicine*, 1884.)

8. *Vaselin.*—There are numerous vaselin preparations in the market at the present time, and of these five are commonly in use—vaselin, cosmolin, densolin, petrolina, and petrolatum. Densolin is the lightest in colour, then follows petrolatum, petrolina, and finally cosmolin, which is the darkest.

By heating these preparations a peculiar odour is developed, which is most marked in petrolina, scarcely noticeable in vaselin and densolin. There is quite a difference in the freezing point, which may be of marked importance when employed in practice, since the heat of summer has a tendency to melt the salve and make it inconvenient to apply it as a dressing. Densolin fuses at 40° C.; vaselin and cosmolin at about 39° C.; petrolina at 52·22° C.; petrolatum at 54·44° C. To determine the freezing point a small portion is put into a test-tube and covered with water; the tube is then put into a water-bath and heated slowly; when it arrives at the point of melting little bubbles of the oily substance rise to the surface. Impurities are detected by adding sulphuric acid and allowing it to remain in contact for a few hours, and if the vaselin changes colour it contains organic substances.

(1.) Densolin, where shaken with sulphuric acid (1·540 specific gravity), at first colours slightly, and in the course of two hours takes on a reddish-brown colour.

(2.) Vaselin is quite brown from the beginning, but does not at the end of two hours get any darker than densolin.

(3.) Petrolatum turns very dark at once, and finally gets almost black.

(4.) Cosmolin changes at once, and in two hours takes on a deep brown colour.

(5.) Petrolina changes at once, and finally looks of a dirty, reddish-brown colour.

The presence of lard or fatty oils, of vegetable or animal origin, is detected by adding five grammes of soda to five grammes of vaselin, and then shaking with twenty-five grammes of water. The liquid is decanted and treated with dilute sulphuric acid, and if the vaselin specimen was pure, no fatty substances appear, while if a foreign oil is present it will be separated by the sulphuric acid. Neither of the above-mentioned preparations showed impurities by this test. The densolin petroleum salve seems to be the most applicable for all general purposes; next comes vaselin.—(*Zeitschrift des allgemein. Apoth. Vereins.*)

Quite recently the Cheeseborough Manufacturing Company have been placing a preparation called "white vaselin" on the market, and while it looks very nice, it contains impurities that will undoubtedly prevent it from coming into general use. As an ointment in eye diseases it will not answer, since it will not melt as readily as vaselin. It looks granular, and does not possess that smooth, oily appearance found in pure vaselin.—(*Therapeutic Gaz.*)

9. *Tonsillitis.*—The prevalence of diphtheritic inflammation of the tonsils, and the liability through carelessness on the part of the examiner, or the wilful mistake on the part of the dishonest practitioner, to confusion of this inflammation with a violent grade of non-specific tonsillitis, makes a consideration of the latter all the more interesting and important. Unquestionably the honest practitioner, during the existence of an endemic of diphtheria, is frequently disposed in cases of the doubt which a violent case of pure tonsillitis arouses in his mind, to give the community the benefit of the doubt, by pronouncing the case one of diphtheria. If there were an agent which could be depended upon to promptly allay non-specific inflammation of the tonsils, its use on the inception of

the inflammation would, doubtless, be the means of frequently relieving the anxiety of both the medical attendant and friends. From the claims made by Dr. S. Solis Cohen, of Philadelphia, for the following treatment, it would seem that a decided step had been made towards the supplying of this desideratum. In simple inflammatory tonsillitis he administers the following:—Take two fluid drachms each of the ammoniated tincture of guaiac, and the compound tincture of cinchona, which mix with six fluid drachms of clarified honey, and shake together until the sides of the vessel are well coated. To this add gradually a solution of eighty grains of chlorate of potassium in four ounces of water, shaking meanwhile. This is to be used as a gargle every one-half to three hours. Relief, he says, is usually experienced within a few hours, and recovery is complete. A saline cathartic may accompany the use of the gargle.

In rheumatic or constitutional tonsillitis, characterised by intense pain in swallowing, causing great accumulations of saliva from unwillingness to swallow, but with slight or no congestion of the throat, and subsequent fever, he gives the following, in tablespoonful doses, every two hours:—

℞. Sodii salicylatis, ʒii.
Ol. gaultheriæ, ♏ j.
Liquor ammoniæ citratis, syrupi simplicis, ää ʒii.
M.

The intervals of administration may be lengthened as the pain subsides. Pieces of ice or guaiac gargle produce comfort, and a stiff neck is best relieved by faradisation. Salicylate of quinine or cinchonidin may be substituted for the above if a tonic be required, in 5-grain doses every four to six hours.

If this treatment shall prove as promptly efficacious as Dr. Cohen claims it has in his hands, its administration in the early stage of congestion of the tonsils cannot but prove valuable, even though the case should subsequently develop into one of diphtheria.—(*Therapeutic Gazette.*)

10. *Thallin.*—The indefatigable industry of Continental chemists in the application of synthetical methods to the formation of new compounds has brought into the field another antipyretic, which is said to have been used successfully in a large number of cases in the clinic of Professor Nothnagel (*Pharm. Post*, Nov. 1, p. 1,038). It has the constitution of a secondary chinolin base, being one of a number of chinolin derivatives prepared by Professor Skraup,

and is represented by the systematic name, "tetrahydroparachinanisol." The salts of this base, which have an acid reaction, are all freely soluble in water, and have the property of forming green compounds when treated with solution of ferric chloride and oxidising agents. On account of this peculiarity the cumbrous systematic name has been dropped in favour of the shorter designation, "*thallin*." The hydrochlorate, sulphate and tartrate of thallin, and the hydrochlorate of ethylthallin, are the salts that have been used, and these are said to show great antipyretic activity in doses of quarter, half, and three-quarters of a gramme, a point in which thallin would seem to compare favourably with some of its competitors. The lowering of the temperature is said to take place gradually, and to last a considerable time, whilst it is not accompanied by any secondary disturbances. Thallin can be conveniently administered in wafers containing a quarter or half of a gramme of the sulphate. Two other chinolin derivatives have also been experimented with—parachinanisol, which has only slight antipyretic properties, and tetrahydroparaoxychinolin, which proved fatal to guinea-pigs in doses of 0·2 to 0·6 gramme, with violent tetanic symptoms. It may be remarked that the name "thallin" hardly seems to be happily chosen, since the appearance of "thallin sulph." on a prescription might easily lead to misconception and perplexity.—(*Pharm. Journ.*)

11. *Cocain* (*Cucain*).—Dr. Squibb (*Ephemeris*, November, 1884) observes that the effects of cocain as a local anæsthetic are wonderful, and it is, perhaps, still more wonderful that these effects should not have been before discovered. There have been several independent investigations of its physiological and therapeutic effects, but it remained for Koller (Sept., 1884) within a week's time to raise it from an obscure position in the list of useless alkaloids to an importance and utility hardly exceeded in the materia medica. It had been repeatedly given both internally and hypodermically, and found to require large doses, often repeated, to produce any appreciable effect. One grain of it will give complete anæsthesia of an eye for ten or fifteen minutes, fifty times, and yet the same quantity taken into the stomach has hardly given an appreciable effect, and this quantity represents about 400 grains of good coca. Thus there seems to be very little relation discoverable at present between its general effect on the economy and its local effect. As an agent correctly and properly classed with tea, coffee, guarana, &c.,

as a nervous stimulant it was so indefinite in effect—at least when of poor quality—as to lead some close observers to doubt or deny its stimulant action, when now it suddenly comes into view in the opposite *rôle* of the most powerful nervous sedative ever known short of absolute destruction of tissue. The action of heat or of chemical cauteries, which destroy the tissues, do not more completely obliterate sensation than this agent, and yet it does not appear to interfere with vitality at all, does not irritate at all either primarily or secondarily, and its profound action appears to be followed by no hurtful reaction. With such a character so suddenly acquired, it seems practically to have sprung into existence fully armed for a great amount of future good in the art of medicine. Already it has been applied to many purposes besides those of ophthalmology, and extravagant and improbable statements in regard to its effects are circulated, and it has also, doubtless, been often misapplied, but it is far too well tried to be classed with the doubtful novelties of the time, or have an uncertain importance in the future. The difficulty now is to get it for application.

The opportunities for an extensive use of the agent are very numerous and important. Its principal effects, so far, have been for the most part upon mucous membranes, or upon surfaces denuded of cuticle, and it is not known how far it will affect unbroken skin or the tissues beneath. Some superficial neuralgias are said to have been benefited by the application of the solution, and upon this the writer has suggested the use of the paper wetted with the solution and then dried—the paper to be cut of the size of the superficial pain—to be wetted and applied to the part, and then to be covered with oiled silk a little larger than the paper. The results of such applications have not yet been heard from.

A far better preparation, however, for such uses would be an oleate of cocain. The alkaloid unites directly with oleic acid, and forms a true salt, and this salt is a principal object the writer has in view if he should finally succeed in making the alkaloid. The facility with which these oleates are absorbed by sound skin, and the depth to which they probably penetrate before being too much diluted by the circulating fluids, give, theoretically, great promise for the use of such a preparation for the relief of local pain.

The commercial supply of the drug is at present uncertain, and has been very bad for some time, the quality of the leaves imported being of very inferior quality.

The character of coca as a therapeutic agent is not very good.

The florid stories of a multitude of travellers and writers, up to and including the testimony of Dr. Mantegazza, received a considerable support from so good an authority as Sir Robert Christison, who reported very definite results from trials made upon himself, and upon several students under his immediate control and observation; and his results seem to have led to a very careful and exhaustive series of observations at University College, London, by Mr. Dowdeswell. This paper, published in *The Lancet* of April 29 and May 6, 1876, pp. 631 and 664, is entitled "The Coca Leaf; Observations on the Properties and Action of the Leaf of the Coca Plant (Erythroxylon Coca), made in the Physiological Laboratory of University College, by G. F. Dowdeswell, B.A." The results of these investigations were absolutely negative, and at the close of the work the investigator says:—"Without asserting that it is positively inert, it is concluded, from these experiments, that its action is so slight as to preclude the idea of its having any value either therapeutically or popularly; and it is the belief of the writer—from observation upon the effect on the pulse, &c., of tea, milk, and water, and even plain water, hot, tepid, and cold—that such things may, at slightly different temperatures, produce a more decided effect than even large doses of coca, if taken at about the temperature of the body."

Dr. Königstein, of Vienna, has made some interesting observations, and points out that cocain has been found in the aqueous humour; and, if that be tapped, and the fluid dropped into another eye, the characteristic anæsthesia is produced. It may be used, in combination with eserin, in cases of glaucoma, neuritis retrobulbaris, in ptosis due to sympathetic paralysis, and in clonic spasm of the orbicularis. The action of cocain, as an anæsthetic in eye-affections, was well known long before the publication of Koller's results at the Ophthalmic Congress at Heidelberg in September last. In support of this statement, Dr. Königstein refers to an exhaustive article by his colleague, Dr. Freud, in the July number of the *Centralblatt für Therapie*, and to the article on cocain in the *Arzeneimittellehre* of Rossbach and Nothnagel.—(*Brit. Med. Journ.*, Jan. 19, 1885.)

Few untoward symptoms have as yet been reported from the use of cocain; but Dr. H. Knapp, of New York, thinks that it should be used with greater caution. He says:—"I injected six minims of a four per cent. solution into the orbit close to the posterior segment of the eyeball. The anæsthesia in that part was

complete, and the operation was being proceeded with, when the patient's face became quite pale. In another case, I injected five minims of a three per cent. solution beneath a sebaceous tumour the size of a small nut, situated in the centre of the upper lid. The anæsthesia was almost complete, and the somewhat laborious operation passed satisfactorily; but, during it, the patient became as pale as a corpse, felt somewhat faint, asked repeatedly for drink, and was covered with cold perspiration. In about fifteen minutes, the condition of distress—which was, however, in no way alarming—disappeared." We are indebted to Dr. Knapp for publishing these cases, and fully recognise the importance of proceeding with caution in dealing with new and comparatively unknown remedies; but at the same time we feel convinced that, as a local anæsthetic, cocain is, for all practical purposes, perfectly safe. Any doubt there may have been on this point, is cleared up by the interesting observations of Mr. Eber Caudwell, who took eight grains of Merck's hydrochlorate on an empty stomach without experiencing any very serious symptoms.—(*Brit. Med. Journ.*, Jan. 3, 1885.)

SULPHATE OF COPPER IN OBSTETRICS.

Dr. Charpentier, of Paris, has proposed the use of copper as a local application in obstetric practice. *L'Abeille Médical*, November 17, 1884, gives the following as his conclusions:—Sulphate of copper employed in solution of one to one hundred is an antiseptic of the first order, which can render great service in obstetrics. Absolutely inoffensive to the patient, of a very moderate price, and easy management, it joins to the advantages of being a very powerful antiseptic that of being an almost instantaneous disinfectant. Whether it be employed as intra-vaginal or intra-uterine injection, it is absolutely innocuous. It possesses astringent and coagulating properties to such a degree that it can be substituted as a hæmostatic for the perchloride of iron, over which it has the advantage of not leaving a foreign substance in the wound. The solution should be heated to 100° F. Its use can be continued during the first eight or ten days, several times in the twenty-four hours, without other effect than lowering the temperature and diminishing the frequency of the pulse. The author has had excellent results with the copper solution in large thrombus of the vulva, fetid abscess of the urethro-vaginal fold, and similar conditions, cutting short the general symptoms resulting from the putrid infection, and bringing about rapid healing, where phenic acid solutions had failed.—*Midland Med. Miscellany.*

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ACADEMY OF MEDICINE IN IRELAND.

President—J. T. Banks, M.D.
General Secretary—W. Thomson, M.D.

SURGICAL SECTION.

President—E. H. Bennett, M.D., President and Fellow of the Royal College of Surgeons, Ireland.
Sectional Secretary—William Stokes, F.R.C.S.I.

Friday, January 23, 1885.

Mr. Colles, F.R.C.S.I., in the Chair.

Transplantation of Skin Flaps without Pedicle for Cicatricial Ectropia.

Mr. Swanzy read a paper on Transplantation of Skin Flaps without Pedicle for the cure of Cicatricial Ectropia. He reviewed the steps of the proceeding as usually practised, and gave particulars of six operations he had recently performed, four of them being successful and two unsuccessful. The successful cases were exhibited. In addition to the points generally regarded as important, he drew attention to the following:—1. It is desirable that the wounded surface on the eyelid should be made as extensive as possible by the dissection of the everted lid being carried to the fullest extent. It is not sufficient, as usually recommended, to carry the dissection only so far as to bring the free margin of the eyelid being operated on in contact with the free margin of its fellow, but the dissection of the lid from the surface underneath, to which it is attached, should be gone on with, until, on reflection, the free margin reaches up to or beyond the eyebrow, if it be the lower lid, or as far as, or below, the infra-orbital margin, if it be the upper lid. The object of this is to provide for the inevitable shrinking which takes place in the transplanted flap, so that the ultimate size of the eyelid may not be less, or much less, than normal. This point had not before been

mentioned. 2. With regard to securing the flap in its new position by sutures, it would be much better if sutures could be done without, as they cause suppuration at each point. The author had not experience of Wolfe's method of securing the flap without sutures. If sutures are used, they should be of fine silk or of fine platinum wire, and only so many as suffice to keep the flap in its place. Catgut sutures are not suitable, as they do not hold long enough to enable the flap to become adherent. A large number of sutures are unnecessary, and cause a line of suppuration around the margin of the flap, but platinum wire seems to cause little suppuration. 3. With regard to the dressing, carbolic acid should not be used in any form, being apt to irritate the delicate skin flap and increase the liability to peeling off of the epidermis. He did not agree with Wolfe that the "so-called antisepticism" has no place in ophthalmic surgery. In this proceeding the dressings should be antiseptic, but they should be also non-irritating. Boracic acid and sero-sublimate were among the suitable applications. Finally, he pointed out that where the epidermis has not peeled off, the shrinking is slight in comparison with where it comes away, and where the rete Malpighii has to throw out a new cuticle.

Mr. A. H. Benson considered the communication of importance not only to the ophthalmic surgeon but to the general surgeon, since the transplantation of pieces of skin wholly removed from attachment, as carried out by Mr. Swanzy with a fair average number of successes, was such an advance in plastic surgery that it might be adopted for many purposes besides that of restoring eyelids. In the late Surgical Society he had himself read a paper on the same subject, giving the results of eight cases of transplantation from the arms to the eyelids without pedicle and with a tolerably fair average of success, though not so large as Mr. Swanzy had. He asked, as to the failures, whether the lid was made better by the operation even though the flap sloughed; he also inquired the time of the return of sensation in the transplanted skin. The use of carbolic acid as a dressing he condemned, the effect being to irritate the wound, and he preferred vaselin.

Mr. Wheeler observed, in the formation of new noses, when the flap was taken from the forehead sensation returned earlier than when taken from the cheeks or by Symes' operation.

Mr. Story remarked that all the nerves had to do, when the flap was taken from the forehead, was to continue growing to restore sensibility; but, when the skin was transplanted *en masse* from the area without pedicle, the new nerves had to join on to the skin beneath, and therefore the early return of sensibility was not to be expected. In Mr. Benson's case the return of sensibility was exceedingly slow. He asked Mr. Swanzy to state his percentage of successes in the operation. Where the pedicle existed the operation, if neatly done, was almost invariably

successful, whereas the transplantation of skin *en masse* was precarious. Of Mr. Benson's eight cases, only one was a perfect success—the whole flap lived and the epidermis peeled off. However, in six out of the eight the results were successful.

Mr. Swanzy, in reply, was mindful that Mr. Benson had anticipated him in the operation. His experience of it was extremely favourable. Of seven cases, two had been complete failures, while the rest were, surgically and therapeutically, complete successes. The two failures occurred in the same patient, and arose from the untimely melting away of the sutures. As a rule, the epidermis came away, but he did not desire that result, the flap not being unlike the skin of the cheek where it remained, and the tissue underneath had not to go through the nasty granulating process. He did not note the return of sensation, but it did not take place within a week or a fortnight.

Treatment of Flat-foot.

Mr. Stokes read a paper on astragaloid osteotomy in the treatment of flat-foot; and

Mr. Kendal Franks read a paper on the treatment of flat-foot by Ogston's operation.

On the motion of Mr. Corley, seconded by Mr. Ormsby, the discussion on both papers was, owing to the lateness of the hour, postponed to next meeting.

The Section then adjourned.

MEDICAL SECTION.

President—F. R. Cruise, M.D.; President and Fellow, King and Queen's College of Physicians.

Sectional Secretary—A. N. Montgomery, M.K.Q.C.P.

Friday, January 30, 1885.

The President in the Chair.

Cholera: its Endemic Conditions and Epidemic Progression.

Surgeon-Major J. B. Hamilton read a paper, entitled "Cholera: its Endemic Conditions and Epidemic Progression, with Clinical Remarks and Treatment."

The great conflict of views that strikes the investigator and the difficulty experienced in harmonising the opinions of many and equally capable observers were pointed out. The position of the statistician was illustrated by the case of an observer in a captive balloon seeing the

entire of a great battle, while the reporters in different parts of the field could observe only the events taking place near them. Dr. Bryden's observations (as understood by the writer) were alluded to. The endemic area or manufactory of cholera being the delta of the Ganges, a description of the "Sunderbunds" (this delta) was given, and the general condition of insanitation in India. It was pointed out that the excreta of the inhabitants of this vast continent, estimated at 125,000,000 lbs. daily, or some 20,000,000 tons yearly, were deposited on the surface to be desiccated by the sun and diffused by the air, thus fouling the food and water supply of the entire country. The native of India, while exceedingly particular about his food, owing to caste prejudices, was most careless regarding his domestic sanitation, especially his water supply. Illustrations were given of the use of foul water, even in Calcutta, not far from the palace of the Governor-General. The action of the S. W. monsoon was then shown, and the theory of the advance of cholera from the endemic area was illustrated by special reference to the epidemics of 1878 and 1879 on a map coloured to show the areas attacked each year. Dr. Bryden's forecast of cholera attacking the Punjâb in 1879 was described, and the value of his knowledge of the progress of epidemic cholera, as shown by the advice given by him to the Government of India to march the army encamped in Afghanistan, in the summer of 1879, through the Khyber into India, notwithstanding the fact that cholera was at the time epidemic at Peshawur and in the Pass. By this movement, it is well understood, many lives were saved, and a possible disaster averted. Bryden's theory of cholera was summed up in the words "earth-born," and "air-borne."

The theories of propagation by "water" and "human intercourse" were next gone into. It was pointed out that in India (in the Bengal presidency certainly) the disease advanced with the wind and against the current in the rivers; next, that though the water supply is constantly equally foul, cholera will be absent for years; and lastly, it was pointed out that cholera does not localise itself where the water supply is impure, epidemics ceasing, though the water remains bad, *plus* the addition of cholera poison. At the same time the influence of a bad water supply was freely admitted in intensifying local outbreaks. Pettenkofer's views were alluded to, especially the case of Fort William, Calcutta, and some remarkable evidence, published by the late English Cholera Commission, was mentioned. It was shown that people drinking pure pipe-water were attacked, while villagers close by remained quite free, though they daily drank of water seen to be swarming with Koch's bacillus—in fact, from one of the tanks examined by him. "Human intercourse" was discussed, and it was illustrated by the Hurdwar Fair, to which pilgrims come by thousands from all points of the compass, and, of course, return the same way, but it was a matter of undoubted fact that cholera was never carried

by these pilgrims in a southerly direction, which, of course, would be the case if human intercourse had the influence ascribed to it. But, briefly, it was stated that cholera in India neither "retrograded nor radiates." The immunity enjoyed by hospitals in which cholera was treated was shown, as out of 67 hospitals only 8 were attacked, 59 remaining free. In the writer's experience of sixteen years in India and six epidemics, none of the attendants in the hospitals under his charge had suffered. The fact that cholera was not spread by railways was shown, and the case of Mooltan was alluded to, in which cholera never appeared (though trains from infected districts entered it daily) till rain fell, and then it became epidemic. This latter fact goes to prove the influence of moisture on the action of the cholera poison. It was also admitted that possibly cholera in Europe may take on a more typhus form, and thus become contagious, though the evidence on this head is doubtful. The question of quarantine was gone into, and this point was summed up as "impracticable, useless, and vexatious," but, at the same time, no precautions should be omitted regarding infected ships entering our ports; disinfection of the ship and isolation of the crew being insisted on.

The system of evacuation of infected stations and buildings, as carried out in India, was described, and the evacuation of all buildings attacked by cholera in this country advocated. A condition of perfect sanitation was most necessary, and all possible steps should be taken before the advent of an epidemic. The danger of saline purgatives, when cholera is epidemic, was insisted on, and cases were given, within the knowledge of the writer, where cholera followed doses of Eno's fruit salt.

Cholera was stated to be an infectious disease, not after the manner of small-pox or scarlet fever, but was defined as a disease caused by the reception from without of a specific infective material.

The difference of opinion regarding a bacillus being the origin of cholera, as held by Koch, was shown, and it was held that at present our knowledge of causation is a blank page. The symptoms of the premonitory diarrhœa were given, and early treatment strongly advocated, as it is only in this stage that medicines can be of any avail. Simple instructions should be circulated, and to the poorer classes an astringent mixture, consisting of dilute sulphuric acid, tincture of opium, spirit of chloroform, and peppermint, should be issued gratis.

The symptoms of true or malignant cholera were then briefly given, and the cause of the symptoms was believed to be entirely due to the loss of serum from the blood, though the reason for this action was at present unknown. It was shown that an endosmosis into the intestinal tract was going on, and the inutility of giving drugs or stimulants pointed out. It was further argued that such a course of treatment was positively hurtful, as if reaction set in, the very time it was most necessary the absorbents should be at rest, they were engaged assimilating

opium, calomel, brandy, &c., and the patient too frequently died of the secondary fever induced by our previous well-meant efforts.

In the algid stage external treatment was valuable — frictions, hot bottles, sinapisms, hypodermic injections; but internally, nothing but ice and soda water to assuage the terrible thirst, so that if reaction should set in the patient would be in the best possible condition for after-treatment, and nature might then be guided to a favourable issue. The present outlook regarding the prevention and treatment of cholera is dark indeed, but it is to be hoped that in the future light may be thrown on this, the greatest pestilence that has ever attacked mankind.

Surgeon-General De Renzy, C.B., had had considerable experience of cholera in India under a great variety of circumstances. In Mooltan, one of the hottest and driest places in the world, the rainfall being only 5 inches in the year; at Cherrapunji, where the rainfall is 500 inches a year; at Backergunge, a few feet above the level of the sea; and in the Himalayas, at a height of 7,000 feet; on sandy soils and clayey soils, and in villages built on hard rock; at places where the subsoil water was within a few feet of the surface, and where the soil was as dry as possible to a depth of 100 feet. The maps exhibited did not accord with the facts. The endemic area of cholera was not at all so sharply defined as represented. It included great tracts of country widely separated from the delta of the Ganges. The Brahmaputra Valley, on one side of India, was never free from cholera, as the tea-planters knew to their cost; and Bombay, on the other side, has never been entirely free. Previous to 1865, the mortality from cholera in the city of Bombay ranged from 2,000 to 5,000 deaths a year. Since the introduction of a good water supply in the year mentioned the number of deaths has been comparatively small, except in the famine year, 1879, when vast numbers of famine-stricken creatures flocked into the city. Neither were the diagrams representing the cholera mortality after the Hurdwar epidemic of cholera in 1867 correct. The reason of the mortality appearing so heavy in the country N. W. of Hurdwar was that the registration of deaths was more carefully attended to in the Punjâb. In other provinces there was no regular machinery for the registration of deaths. With regard to the question of cholera being carried by the wind, the best way to treat it was to bring precise, well-authenticated facts to bear on it. He adduced several which entirely negatived the supposition. In 1867 the British infantry at Meerut lost 12 per cent. of their strength, while the artillery and cavalry, which lay within a few hundred yards of the infantry, were nearly as healthy as they would have been in England. The atmosphere in both cases must have been practically the same. The case of the Assam coolies on the Brahmaputra steamers was to the same effect. For upwards of twenty years these coolies had suffered terribly. There was hardly a voyage that there were not many deaths, and yet the crews of

the steamers, a body of from forty to sixty men, had not had twenty deaths in as many years. The crews were in the closest contact with the coolies, lying on the same deck. This case proved that cholera had very little power to propagate itself by contagion, properly so called. In the case of the crews, it might be contended that there was an absence of predisposition which accounted for their immunity. This could not be alleged in the case of another class of passengers—European tea-planters, their wives and children. The part of the vessel occupied by these was separated from that occupied by the coolies merely by a curtain in the daytime. At night there was not even that; and yet in the twenty years there was not half a dozen cases of cholera among the European passengers. While the coolies were dying in scores, the Europeans were in perfect health; and this immunity had lasted so many years that an epidemic among the coolies caused no sort of apprehension whatever among the Europeans. This case proved to demonstration that cholera had very feeble powers of propagation through the medium of air. In these cases there was a radical difference in the water supply. In the case of the coolies, whenever cholera was brought on board, the disease had the greatest facilities for propagating itself through the water supply. Such facilities did not exist in the case of the crews and the European passengers. Surgeon-General De Renzy's experience led him to believe that where the water supply was taken from a pure source and was distributed in such a way as to be secure against contamination, cholera could do comparatively little injury. There were, as yet, very few places in India where these conditions were satisfied. He had never seen a place affected with cholera in an epidemic form in which the water supply was not in a most dangerous state. On the other hand, he adduced several cases in which places that used formerly suffer heavily have had a most remarkable decrease in the mortality from cholera. Fort William was a case in point. This was formerly one of the most unhealthy stations in India; there were constantly recurring epidemics of cholera. In the 10 years ending in 1856 the death-rate from all causes was 103 per 1,000 of strength. In 1865 water was laid on in pipes, and for the last 18 years the death-rate was only 12 per 1,000. It is now one of the healthiest stations in India. Other stations far more favourably circumstanced as regards site, drainage, barrack accommodation, &c., suffer terribly from cholera. Meeanee, Meerut, Morar, Lucknow, are examples. In these stations the water supply is in a most dangerous state. The history of the epidemic of cholera in the last Afghan War points strongly to water contamination as the means by which the disease spread. The history of cholera at Bombay, Nagpur, and Calcutta demonstrates the paramount influence of water in the disease. A large portion of Calcutta is still unsupplied with water. In the portion of the town which has been supplied it does not cause a tenth

of the mortality it used. The European and Anasian inhabitants residing in that part of the town are as healthy as the residents in the west end of London. A clergyman who had much duty to do in officiating at the funerals of Europeans who died of cholera, stated that his occupation was now gone. European deaths from cholera are now extremely rare among European residents at Calcutta and Bombay. Quarantine he looked on as utterly impracticable and highly mischievous, as it led to the wholesale concealment of the disease and the falsification of the returns.

Dr. Henry Kennedy mentioned the fact of vessels leaving port perfectly healthy, and yet on the voyage an immense number of men had been swept off. In London a plan had been recently adopted which was worth a trial—namely, the transfusion of saline fluids into the veins; as much as 80 ounces had been injected, and in some cases with success.

Friday, February 27, 1885.

The President in the Chair.

Cholera: its Endemic Conditions and Epidemic Progression.

The Registrar-General (Dr. Grimshaw), who regretted the absence of the author of the paper, resumed the discussion on Surgeon-Major Hamilton's communication on Cholera, which had been adjourned from the last meeting of the Section. He expressed himself in favour of the belief that cholera was principally spread by human intercourse, and that one of the great influencing causes was bad water, as pointed out by Surgeon-General De Renzy at the last meeting. It was proved that the appearance and progress of cholera in this country followed directly from human intercourse.

Dr. J. R. Burke, R.N., Deputy Inspector-General of Hospitals and Fleets, and Dr. C. F. Moore having also joined in the discussion,

The President expressed regret at the absence of Surgeon-Major Hamilton, whose duty had called him to Egypt. He considered that if there was anything certain in medicine it was that cholera was communicable from person to person.

A Case of Sloughing of the Rectum.

Dr. W. M. A. Wright read a paper on this subject. [It will be found at page 289.]

Dr. Finny referred to a case under his care in which a vaginal examination revealed the true cause of the symptoms to be a mass of impacted fæces in the rectum.

Mr. Doyle and Mr. Foy having made some observations,

The President mentioned that the late Sir Dominic Corrigan used

to lay down that when a diarrhœa obstinately continued, the rectum should always be examined, and it would often be found that there was either fæcal accumulation or cancerous ulceration.

Dr. Wright briefly replied.

Acute Pneumonia in members of the same family.

Dr. Walter Smith read notes of four cases of acute pneumonia occurring in members of the same family at or about the same time:—

Case I.—Boy, aged sixteen years, first seen on third day of illness. A very severe case terminating fatally on the morning of the ninth day. The respirations were rarely below 60, and there was constant delirium. Right lung first affected; then the left lung involved.

Case II.—Boy, aged thirteen years, seen on the second day of illness. Pneumonia of base of right lung spreading on fourth day to base of left lung. Crisis on the ninth day, and good recovery.

Case III.—The youngest boy, aged seven years, seen on first day of illness. Pneumonia of right base. A mild case terminating by crisis on fourth day.

Case IV.—An adult sister of these boys had been ailing for some time with a severe cough, but struggled on until obliged to give up. Pneumonia of the left base, ending favourably by crisis.

The four cases developed within a few days of each other.

The chief point of interest, suggested by examples of multiple cases, is as to their ætiology. That is, are they instances—(*a*) of epidemic pneumonia; (*b*) of infectious pneumonia, imported into a house and spreading from person to person; or (*c*) of pythogenic pneumonia.

The sanitary condition of the house in which these patients lived was very indifferent, but it may be observed that the Report on Acute Pneumonia of the Collective Investigation Record, Vol. II., furnishes "no ground for asserting that multiple pneumonia is associated with exceptionally bad sanitation."

Surgeon-General De Renzy called attention to the frequency of epidemics of pneumonia in the Punjâb, and believed the disease was of an infectious character.

Dr. W. Wright mentioned two cases parallel to those noted by Dr. Smith.

Dr. J. W. Moore espoused the view that pneumonia should rather be styled pneumonic fever, and thought that a correlation existed between pneumonia and enteric fever as regards prevalence.

Drs. C. F. Moore and Doyle also joined in the discussion, and Dr. Walter Smith replied.

PATHOLOGICAL SECTION.

President—A. W. Foot, M.D.
Sectional Secretary—P. S. Abraham, F.R.C.S.I.

Friday, February 13, 1885.

The President in the Chair.

Self-Mutilation of a Lioness.

The Secretary (Mr. Abraham) read a paper on a case of self-mutilation in a lioness. [It will be found at page 193 in the March number of this Journal.]

The President observed that whether they regarded the propensity as a chronic mania or as a form of hysteria, it was an affection of which none of them had much experience. He suggested that it was analogous to the tendency in human beings to bite their nails, and which sometimes occasioned the destruction of the ultimate phalanges of the fingers. The nail-biting began generally before hysteria manifested itself. Possibly, the lioness sought to relieve itself from irritation, and there might be an anæsthetic condition of the tail and foot which enabled it to do so without much pain.

Mr. Collins, late Army V. S., said he remembered seeing a lion or lioness similarly affected. In 1871 a horse was under his observation which, though quiet during the day, kicked furiously at night, and ultimately bit the skin off his chest. A light having been placed in the horse-box, and a man directed to watch, there was no disturbance, and he attributed the animal's action to terror. He knew of spaniels gnawing their tails when sore. In India he knew of a horse lying down and exposing its anus till crows ate away the whole anus and sphincter. Monkeys in confinement mutilated themselves, biting their tails.

Mr. Wheeler mentioned that he had a spaniel bitch which had had several litters of pups, and ate the last litter, then her own tail, and died of convulsions.

Dr. Henry Kennedy instanced a child suffering from hydrocephalus who ate off the entire of the under-lip.

Rev. Dr. Haughton, S.F.T.C.D., said the President had made a good point in comparing the tendency described in the lioness to that of biting the nails in human beings. The nail-biting habit was, in his experience, confined to men. He did not know a woman who bit her nails. There was a great deal in Mr. Abraham's remarks as to the hysterical character of the affection. During the twenty-one years of his secretaryship to the Zoological Gardens he found it necessary to drown animals that bit their tails, being monomaniacs. The tendency was connected with that in

female animals of destroying their offspring. No surer sign existed that something was wrong with a lioness, dog, or pig than when it made a mental calculation of how many of its young it had milk for, and destroyed the rest. The feline carnivores ate their surplus cubs, but dogs had been known to bury them alive. The question raised by Mr. Abraham, that when the breeding period was over there was a liability to permanent derangement or loss of faculty, was a very serious one. He had seen cases of women who, having stopped breeding, either took to drink or became deranged. Self-mutilation was so foreign to animal instinct, it must be due to interference with, or cessation of, some great physiological function.

Mr. Knox Denham mentioned the case of a cat which devoured its four kittens and afterwards suckled three young rats, which became domesticated, running about the house. The children played with them, but the lady of the house becoming alarmed had the rats destroyed.

Gangrene of the Leg.

Mr. Wheeler read notes of a case of gangrene of the leg and occlusion of the popliteal and tibial veins in a man, aged forty-six, of intemperate habits, who had twisted his leg whilst wrestling. When admitted to hospital the leg was swollen, hot, much discoloured, and with large sanguineous bullæ. It was quite free from pain. The specimen exhibited showed well-formed thrombi, occluding the interior and posterior tibial veins, there being the several examples of the "obliterating," the "valvular," and the "parietal" thrombus; the wall of the vein, in the first case, being much thinned. Allusion was made to some of the recent theories of coagulation of blood.

The President remarked that, the specimens being so dry, it was impossible to tell whether or not there had been any inflammation; but the intemperate habits of the man and the bruise or twist went a long way to explain what occurred.

Mr. M'Ardle said the twist would have sufficed to tear the inner coat of the vein, which would have led to the formation of a clot sufficient to cause occlusion.

Endocardial Concretion.

Mr. Broomfield exhibited and explained a specimen of endocardial concretion, which was taken from an old woman, aged seventy-eight. Being a dissecting-room specimen, he had no history of the case. The specimen was of a calcareous character, and interesting from its exaggeration, extending round four-fifths of the mitral orifice, and running three-quarters of an inch into the ventricular wall. At one point there was complete rigidity. The endothelial lining was perfectly healthy, and the valves were comparatively healthy. It was curious that

such a calcareous zone should have formed round the valves without implicating them, or causing incompetence. There was no appearance of any other cardiac lesion.

Croup of the Colon.

Mr. M. A. Boyd exhibited a colon removed from a man, aged thirty, who died in the Mater Misericordiæ Hospital with all the symptoms of tropical dysentery of a month's duration, having had the usual fœtid stools, containing mucus, blood, and shreds of lymph and mucous membrane, with most distressing tenesmus, a dry brown tongue, dryness of the throat, and difficulty of swallowing, vomiting, and hiccough. The temperature throughout, except in the beginning, when the attack came on with shivering and hot skin, was either normal or subnormal. There was tenderness over liver; no enlargement of spleen, and no peritonitis. The ascending colon could be felt through the abdominal wall, round, resisting, and tender. The autopsy revealed not ulceration of rectum and colon, but general thickening of the mucous coat of the colon throughout, with exudation upon it of an adventitious lymphy membrane. From the close resemblance of the symptoms to dysentery, many of the so-called cases of dysentery were in reality cases of croupous or diphtheritic disease of the colon.

The President regarded the specimen as a good example of diphtheritic enteritis. There was an absence from it of the fœtor which was characteristic of dysentery. Sometimes casts of the entire bowel formed by the membrane were passed.

Mr. Lentaigne inquired if there was much superficial tenderness, and if any member of the man's family had similarly suffered.

Dr. Henry Kennedy, referring to his extensive opportunities of seeing cases of dysentery in 1847–8, said he had seen the whole bowel from the stomach to the rectum covered with croupous exudation, giving rise to symptoms analogous to those produced by ulceration. A physician to the Queen, who had published an account of a violent epidemic of dysentery in Millbank Prison, had recommended mercury as a most effectual remedy.

Mr. Boyd, in reply, said tenderness of the abdomen was absent, except along the descending colon. The family history was good, all his family being healthy.

Aneurysm at the Base of the Brain.

Mr. Lentaigne exhibited an example of aneurysm at the base of the brain, which was taken from a woman who, whilst putting a postage stamp, which she had just bought, on a letter, fell dead in the shop, as if struck by lightning. Up to the time of her death she had been apparently in perfect health. On *post mortem* examination he found that a large

quantity of blood, effused at the base of the brain, had come from an aneurysm, about the size of a pea, formed in the middle cerebral artery, at its junction with the posterior. The artery was split open with a large rent. There was no disease elsewhere, save that the kidneys were small and contracted. Almost all the vessels of the brain were atheromatous, but the aorta was perfectly free from atheroma. A great deal of blood was wedged in below the medulla and spinal cord. The stomach was full of tea and undigested potatoes.

The PRESIDENT observed that the compression of the medulla by the effused blood was no doubt the cause of death.

Pericarditis in a Horse.

MR. ABRAHAM read a paper for Dr. Nixon on pericarditis in a horse, showing the specimen. The principal features were enormous hypertrophy and an extraordinarily extensive fibrinous exudation covering the whole pericardial surface. The normal weight of the horse's heart was six or seven pounds, but this specimen weighed twenty-one pounds. The notes of the case were taken by Mr. J. Kenny, V.S., under whose care the horse had been for pleuro-pneumonia, which had yielded to treatment. A week after the animal was brought back, with high pulse and friction sounds over the heart, subsequently becoming dull. At the *post mortem* examination four gallons of yellow fluid was obtained from the pericardium. The hypertrophy of the heart was of long standing, and caused chiefly by the heavy work which the animal had to perform. The pericarditis appeared to be secondary to the pleuro-pneumonia. The immediate cause of death was the enormous pericardial effusion.

The PRESIDENT remarked that a chronic form of pericarditis, with effusion, had been observed by Cruveilhier, of Paris, who attributed it to overwork and the wearing out of the system. In the present case the question arose—Had the horse Bright's disease, and was the hypertrophy a result of sclerosis of the kidneys?

MR. COLLINS said he had noticed in epidemics of influenza in horses that the disease principally attacked the serous membranes, and afterwards the pericardium. In 1856 the horses of the regiment to which he was attached at Manchester were decimated by an outbreak called influenza, and in every case the lungs and pleura were glued to the ribs.

DR. HENRY KENNEDY remarked that there was in the Museum a specimen of pericarditis in the cow.

The Section then adjourned.

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

SESSION 1884–85.

President—John Fagan, F.R.C.S.I.
Hon. Secretary—William G. MacKenzie, F.R.C.S. Ed.

Thursday, February 5, 1885.

The President in the chair.

The Causation and Treatment of Scarlatina.

[*Concluded from page 253.*]

Dr. Harkin said:—Mr. President,—In responding to your invitation to take part in the discussion on scarlatina, as initiated by Dr. Whitla's lucid exposition of our present knowledge of that disease, I have not any intention of enacting the part of a critic; indeed my chief objection to that paper consists in the fact that it was so carefully elaborated that commentary, except in complimentary terms, was quite out of the question. Any observations I make shall be limited to the consideration of topics naturally arising from the subject-matter of that very suggestive *brochure*.

While discussing the ætiology, causation, and mode of propagation of scarlatina, the writer seemed to incline to the opinion of the exclusive spread of the disease by infection, personal, or by fomites. Of the heterogenetic origin of the disease there cannot be any question, as, like another of the exanthemata, small-pox, it has even been reproduced by inoculation; and yet I think that there is sufficient evidence to show that, like diphtheria, it may frequently arise in a sporadic form, autogenetic, from a local cause, as well as from an antecedent case; just as typhoid may originate spontaneously, and become infective from defective sanitary arrangements.

Like diphtheria, with which scarlatina has many analogies, as sore throat with exudation, in the frequent concomitance of nephritis and albuminuria, in the rash, though often of a hybrid nature in the former case, and taking into account the difficulty often experienced in making a satisfactory differential diagnosis when illness arises in a large family, and to determine which is pure scarlatina or diphtheria, or which a compound of both, I believe scarlatina may also arise *de novo*. I have a lively recollection of a case where a young fellow caught scarlatina

in the ordinary way, and passed through every grade of the disorder, and who, when at college later on during an outbreak of diphtheria and scarlatina, was among the first to show the rash upon his chest. This epidemic was traced to defective sewerage, which had poisoned the air, the water supply, and the brewery of the establishment; two of his companions died of the attack, which ceased only after the substitution of earth closets for the insanitary arrangements previously subsisting.

What is more frequent than the appearance of skin affections after surgical operations—at one time an erythematous blush; again, true erysipelas; and again, although not so frequently, surgical scarlatina, often in a fatal form? It is not possible to trace the latter affection in every case to infection or suppressed disease, and if true scarlatina may arise *de novo* as a traumatic affection, why may it not also arise under the circumstances which are known to give rise to diphtheria, a cognate disorder? It may be objected that this exanthem is not found in newly-discovered countries, but this may be for the reason that this disease, like typhoid, is one of the results of civilisation, and not often found save in those houses and places that are defective in dealing with excretory matters, and with poisoned effluvia. When describing the many modes of infection and of the transmission of the disease, Dr. Whitla referred to cases published which established the fact of the transmission from man to some of the inferior animals of the virus of scarlatina. This is a very important fact both from a physiological and from an ætiological point of view; as if domestic animals are liable to contract the disease they may also carry the infection from beyond the precincts of their homes. I shall give an example from my own experience:—Some twelve years since I attended a young gentleman in a protracted case of scarlatina in Salem, a house upon the Circular-road. During the greater part of his illness a favourite greyhound lay constantly at the foot of his bed. One day my attention was called to the dog's condition by a lady-friend in attendance on the case, giving it as her opinion that the hound had caught the infection, and was suffering from acute scarlatina. The dog was languid and weak, his skin extremely hot, his nose dry and burning, the glands at the angle of the jaw swollen and hot; he had not tasted food for many days, and swallowed water with great difficulty; further, a portion of his body, where the skin was exposed by an accidental removal of his hair, was perfectly scarlet. I need not say that I did not ask leave to inspect the glosso-pharyngeal region. After some time he was able to crawl from the bed; he regained his strength, and immediately free desquamation of his skin began—it came off in large wreaths, the hair, of course, being unaffected. In fact, the animal had all the objective and subjective symptoms discernible under which his master suffered. I may add, parenthetically, that having been much struck with the unique occurrence, I related the particulars at a meeting of the Irish Medical

Society; the members present on the occasion appeared to be labouring under a fit of so-called scientific scepticism, and I was rewarded for my pains by a verdict of "not proven." In again recounting the particulars of the case in the light of extended observation to a later meeting of the same scientific Society, in appealing from Philip uninformed to Philip well-informed, I think I may fairly ask at your hands a *reversal* of the *sentence*. Naturally arising out of this topic I may be permitted to suggest for future consideration at our meetings the subject of the communicability of acute specific disease from man to the brute creation, and *vice versâ;* next, the *in*communicability of disease from man *to* the inferior classes of animals, and the non-infectiveness of their diseases in turn, as far as man is concerned. The diseases which may be conveyed from man to animals are, I believe, as far as are known, very few—scarlatina and measles we may admit; there may be others not generally known. Trousseau writes of vaccinia having been produced by binding round the body of a cow for a number of days a blanket taken from the body of a small-pox patient, but this has not been quite established. Cholera has been communicated to Guinea-pigs by injection of fæcal matters. The diseases which man receives *from* animals are more numerous and important, such as farcy, glanders, vaccinia, grease from the horse; it has been even stated that rinderpest is thus communicable. The insusceptibility of disease in the lower animals from man is very remarkable; the inoculation of syphilis has, I believe, invariably failed; and this power of resistance possessed by them is a formidable barrier in the study and investigation of the causes of disease. The power of communicating disease to man possessed by the lower animals is comparatively great; the trichinous disease will at once occur to our thoughts; and I have recently had tangible proofs of their power to transmit skin affections, for being called to prescribe for a number of children in one family who became affected with most troublesome scabies, in consequence of one of them finding a sickly kitten at her door, taking it into her arms, and giving it shelter; the kitten was covered with this disease, and in return gave all it had to give—a pestilent attack of scabies.

Dr. Whitla did not devote much time to discussing the treatment of scarlatina; indeed it is not a disease to dogmatise about—it is so variable in each individual case, and so distinct in each recurring epidemic, that a plan of cure eminently successful at one time egregiously fails at another. It is thus that many well-informed practitioners recognise, as an important item in the study of the disease, the variations which it undergoes at various periods of time. Thus in the first four years of this century, as recorded by Graves, the epidemic answered to the description of the scarlatina maligna of authors, and was most fatal, many children dying on the second day of the attack. The disease then changed its character, and during the next twenty-seven years is was so

simple and mild that it yielded to ordinary antiphlogistic treatment and mild purgatives. The epidemic of 1834-35, however, proved as fatal as any, and refuted the idea that the success of the previous years was due to cooling regimen and depletion. From that date to the present scarlatina has not been less changeable in its general aspects—at one time mild, at another malignant and fatal. These alternations tend to show, *pro tanto*, that all diseases, contagious or non-contagious, acute and chronic, have been observed to possess a certain constitution or general character, which continues for a number of years in succession, with occasional interruptions, until it is displaced by another constitution of different character, thus attesting the correctness of the "constitutio morborum stationaria" of Sydenham—at one time marked by a typhoid or asthenic character, at another by the predominance of digestive derangement; again, by cerebral or nervous symptoms, or by vascular excitement, local determination, and inflammatory action.

Some mild cases require no other remedies than diluent drinks, and rest in bed; while in members of the same family, and the same epidemic, we may exhaust all the armamenta of our art, and fail in the endeavour to cure. At the same time some general principles may be laid down for our guidance, and judicious medication is often necessary—the colour and development of the rash, the condition and the temperature of the skin, the presence or absence of nephritis and albuminuria, the evidence or otherwise of exudation in the fauces, and the nervous symptoms require our best attention.

As local applications, the inhalation of steam and its application to the fauces, frequent sponging of the body with warm water, the application of a blanket wrung out of hot water for nephritis, or retrocession of the rash, suggest themselves as most useful. Occasionally, in suitable cases, I have found the application of a few leeches, externally, relieve the inflamed tonsils; sometimes a blister applied to the same region for a couple of hours has rendered good service, followed by hot poultices. As a gargle, chlorate of potass, with a small proportion of Condy's fluid, has often given relief, and the most experienced writers recommend the chlorate in weak solution as a wholesome drink; in cases of debility iron in the form of tinct. perchlor. is a useful adjuvant. These, with nutritive food and moderate stimulation, so generally requisite in a disease of marked debility, and the prudent application of the general principles regulating the treatment of acute affections, are the indications that are most apparent to the careful observer.

Inaugural Address. By the President, JOHN FAGAN, F.R.C.S.I.

GENTLEMEN,—I feel deeply sensible, I can assure you, of the honour you have done me by electing me as your President for the present year—an honour that is enhanced by the unanimous and hearty manner in which it has been conferred. It will be my earnest wish and endeavour to prove myself worthy of such, by upholding, in every way I can, the dignity that attaches to the honourable post of presiding over such an influential and intelligent body of gentlemen as the members of the Ulster Medical Society. Guided by the bright example of my predecessors, and relying on your kind assistance and forbearance, I hope that when my time arrives to vacate this chair it can be said of me that I have discharged the functions of my office in a not less satisfactory manner than those who have preceded me.

The first difficulty that besets my path is the selection of a suitable topic on which to address you. This wondrous epoch of ours, teeming as it is with startling innovations, is not wanting in the production of societies—religious, scientific, political and social, to promote and protect their various interests. Every profession, every trade has its societies to represent the different shades of thought and interest in each. The profession of medicine is not behindhand as regards the number and importance of its representative bodies. At the annual meetings of our great parent society we are treated to Presidential addresses, learned orations on some of the absorbing topics engaging professional interest at the time, while the Presidents of Sections and the readers of papers thresh out pretty completely the several subjects of most interest in their departments of medical science. Again, if we look over the country we find numerous smaller societies working on lines similar to their great prototype, and if, together with the work done by those, we consider the addresses annually delivered in our Universities, Colleges, and Hospitals, it is not to be wondered at that there remains scarcely one spot unexplored in the regions of medicine.

It is not my intention to ask you to accompany me into strange regions on speculative inquiries, or to travel over again the well-beaten path that is so familiar to us all as "the review of the progress of medicine and surgery for the past decade." Neither is it my intention to dwell on, as critic or panegyrist, the great achievements of such men as Pasteur, Koch, Lister, Wells, or Billroth, the great champions of our profession who, by their labours, are daily gaining fresh laurels—one set in the field of preventive medicine, the other by their skill and daring penetrating the most sacred chambers of the organism, and each succeeding year astonishing the world by some novel and bold surgical enterprise; such victories are of frequent occurrence, and our journals duly chronicle those achievements under such headings as hysterectomy, oöphorectomy,

splenectomy, ovariotomy, nephrotomy, cholocystotomy, and gastrotomy, as well as other exploits in the field of abdominal surgery.

To no such stirring themes do I invite you to listen. Mine will be a less pretentious one, but not less important. It is familiar alike to the pure physician and the pure surgeon, but more especially so to those engaged in general practice. I am sure every thoughtful and observant practitioner who has been some time engaged in professional work, when he looks back over his past labours, must be forcibly reminded of some weak points in the continuity of his practice, such as a wrong diagnosis, an erroneous treatment based on it, a case gone wrong owing to a timid, careless, procrastinating way of dealing with it.

In casting about for a subject, it occurred to me that I might with advantage dwell for a little on some of these points, and by directing our attention more particularly to them we might be able to detect and strengthen those weak links in the chain of our professional labours. To the enthusiast surgeon such an every-day subject will appear dull and uninviting, lacking as it does the glamour of novelty or daring enterprise, but to the thoughtful practical mind it will meet with the reception that its importance and usefulness deserve. As I grow in years and experience the more strongly do I become impressed with this idea, that we allow ourselves to be carried away too much by speculative theories and novel practices, very often to the neglect of the first simple principles—a true appreciation of which, together with their timely and judicious application, are of infinitely more benefit to the race than the aggregate of the most brilliant discoveries recently made.

The subject-matter of my discourse, to which I will now direct your attention, is—the great importance of, 1st, accurate and early detection of disease and injury; 2nd, the adoption of a timely, judicious, and decided mode of treatment. A higher and more important function still than early detection is the prevention of disease and injury; and it can never be said of our noble profession that, whilst it might appear to be their interest to be indifferent to such, they have not repeatedly and loudly raised their voices, proclaiming with no uncertain sound the importance and necessity there is for observing the common laws of hygiene. In proof of this we have only to look to the labours and teachings and warnings of such men as Jenner, Pasteur, Koch, and Lister, the great apostles of "preventive medicine," who have preached, and are still preaching, the gospel of sanitation, whereby not only individuals and communities but whole races have been and may still be benefited. Notwithstanding this, ignorance and apathy still prevail, and as the outcome of such, together with the inevitable tendency to degeneration inherent in our nature, the services of the physician and surgeon are still, and, I believe, always will be, in active requisition. If, then, we cannot hope to prevent the occurrence of disease and injury, it behoves us to try and

recognise it in its earliest manifestations, for by so doing it can more effectually be arrested or brought to a satisfactory issue.

The first proposition, then, must forcibly commend itself to us, inasmuch as the more accurately the truth is known concerning any subject, the more efficiently can it be dealt with. On the medical attendant devolves the onus of finding out the truth concerning the cases brought under his observation, and on the acuteness of his diagnostic powers often hangs the well-being—nay, even the life of his patient. Ability as a diagnostician is one of the highest attributes of the physician or surgeon, for excellence in it demands that they be possessed not alone of many highly-developed physical qualities, and a large and varied experience, but pre-supposes as well an accurate knowledge of a wide range of scientific subjects. With all these qualities the highly accomplished consultant makes his mistakes in diagnosis as well as the humblest practitioner, and "*Humanum est errare*" may, with peculiar appropriateness, serve as a motto for all of us. I have somewhere heard the statement, and often seen it verified, that there is nothing more humiliating to the pride of our profession than the records of the *post mortem* room.

While there must always be differences in men's diagnostic powers, there is one important particular in which all should be equal, and that is the desire to leave nothing undone to enable us to make our diagnosis as accurate as possible. I do not propose to consider what should be the qualities of a good diagnostician, or the best methods to be employed in making a diagnosis, but I will draw your attention to what I consider to be some of the main defects to which not a few are liable:—

1st. A tendency to form a rapid conclusion on very slender data.

2nd. Putting leading questions to a patient.

3rd. Imperfect or ill-conducted physical examination, or no physical examination at all.

The first of these, we will admit, is a common cause of cases of mistaken diagnosis, and I think it can be accounted for in this way. Medical men in large practice would find it physically impossible to get through the amount of work they perform had they to carefully consider in detail each case presenting itself; besides that, they acquire through their large and varied experience a power akin to instinct that, from what I may call the physiognomy of disease, enables them to form, as a general rule, a very accurate diagnosis. That they are sometimes wrong, and evil results follow to doctor and patient, cannot be denied, and there are few of us that do not know or have not heard of cases, painful illustrations of this fact. I, some time ago, heard the following:—A man, who had been some days before in a drunken brawl, consulted his medical attendant for a slight headache and general contusions. A warm bath and some alterative medicine were prescribed, and he was told he would be all right in a few days.

After a few days' time the man, not feeling better, again consulted his doctor, who found his patient's headache much worse, and also that he had vomited a couple of times. Still looking to the stomach as the cause of his disorder, suitable drugs were again prescribed. A few days after this the headache and vomiting ceased, but the patient began to lapse into a dull state, varied by occasional fits of restlessness and excitement. At this stage another practitioner was asked to see the case, who, after getting an accurate history, made a careful physical examination and found a small contused wound on the man's head that up to that time had not been detected. The opinion then formed was that the symptoms were due to cerebral mischief, and treatment was accordingly directed to it, but notwithstanding this the man died comatose in a few days. Instead of rushing to the conclusion that the man's headache depended on disordered stomach following his debauch, had his medical man carefully gone into the history of the case, followed up by a close physical examination, the probabilities are that an accurate diagnosis would have been made, a rational mode of treatment adopted, and, as a result of such, a life perhaps saved.

The second defect to which I wish to draw your attention is, "the habit of putting leading questions to a patient." This practice very often results in a wrong opinion being formed, for if the objective symptoms be not sufficiently well marked, the patient is questioned and cross-questioned, not so much with the view to elicit facts as to get confirmatory evidence of some hypothetical diagnosis already formed. Having once formed and expressed an opinion, it is astonishing with what tenacity we hold on to it, and any fresh symptoms arising, and existing ones becoming more marked, are bent and twisted to harmonise with our prejudiced view. Let a fresh mind be brought to bear on the case at this advanced stage; it will at once, by the light of the new and better-marked symptoms, arrive at a true diagnosis; and it will then strike us how strange it was we did not see the case in that light before.

The third defect—and a very grave one in making a diagnosis—is where no physical examination, or a very indifferent one, is made. I need not dwell on the disastrous train of symptoms that often follow in cases where physical examination has been neglected. Some of you have heard, no doubt, of patients treated for colic and dyspepsia, who, on being subjected to careful physical examination, were found to be suffering from a strangulated hernia. I have known cases of incontinence of urine where strychnine and other drugs were assiduously administered, with a view to render the bladder capable of retaining its contents when that viscus was distended to the point of rupture from inability to get rid of, except in drops, the accumulated urine. That such grave mistakes are occasionally made is unfortunately too true; and in well-marked cases, such as those mentioned, where the symptoms point

strongly to the more than probable cause, and indicate the necessity for a physical examination, the neglect to do so must be attributed to the culpable carelessness or gross ignorance of the medical attendant. While a perfunctory examination is not so bad as no examination at all, it cannot be too strongly condemned, for while there is an attempt to comply with the form of examination, apart from the mere formality, it serves no useful purpose. It is not an uncommon thing, when a child suffering from a slight pain in a joint or limb is brought for professional advice, for the doctor to feel the parts as it stands beside him, and not detecting anything strikingly wrong, while he prescribes some simple application, gives the consoling opinion that it is nothing worth considering, and will come all right in a little time. The parent, now relieved of all anxiety, accounts for the symptoms as due to the child's nervous disposition, or to what is popularly known as "growing pains." But a condition of well-marked arthritis or osteitis soon after manifesting itself, rouses again the parent's anxiety, and the doctor is a second time consulted. The more decided symptoms now present demand a strict physical examination, followed no doubt by the consciousness that had such been done on the first occasion, much mischief might have been averted. I have met with cases where sedatives were assiduously applied along the course of painful nerves of arm and leg, and hopes held out that with time, change of season or of climate, the pain would disappear, where a careful physical examination afterwards revealed a cancerous nodule in the axilla, or a similar malignant mass in the pelvis, as the true cause of the symptoms present.

There are two affections, of which I see a considerable number occurring with great frequency, and in which an accurate and early diagnosis is of paramount importance—I allude to cases of hip and spinal disease. In their early stages it is often a most difficult matter to make a correct diagnosis; the symptoms in each are obscure and ill-defined, and in the case of hip disease, singly, or even in groups, are not conclusively pathognomonic of this affection. Hence we may have pain in the knee, flattening of the buttock, flexion of the thigh, pain in the groin, stiffness of the joint, each and all of which are usually found in hip disease, and yet their presence is not conclusive of it, as these symptoms may be due to other pathological states. It is for want of making a thorough and complete physical examination that medical men, seeing one or a group of symptoms usually associated with hip disease, jump to the conclusion that it must be present, when they ought to remember that the same symptoms may be equally conclusive of a totally different condition. I knew a very eminent surgeon who, forming his diagnosis on the presence of one or two prominent symptoms, pronounced the case he was called to see to be one of hip disease; accordingly, he gave instructions to have the best room in the house given up to the patient,

as her case would be tedious, and likely to confine her to bed for three, six, or perhaps twelve months.

His orders were carried out, but the cure was more rapid than he had anticipated; in a week after he saw her, the child one night passed a large quantity of pus per anum, and in three weeks was up and about. It was a pelvic abscess, not a case of hip disease; the more prominent symptoms present were common to both affections, and his neglect of making a careful and thorough differential diagnosis led him into the mistake he made.

The following case, that occurred in my own practice a few years ago, I think worth recording:—After I had concluded my lectures on hip disease at the Children's Hospital, the students of my class, during my absence, examined a case that was brought for me to see, and pronounced it to be one of hip disease. They detailed as present most of the symptoms common to the affection—viz., lameness, flexion of thigh, flattening of buttock, pain and swelling in the groin. And seeing the child, who was now dressed, walking with the characteristic gait, I coincided with the opinion expressed by them that the case was one of hip disease in its first stage. I told the mother of the child what my opinion was, and that a splint, which I then ordered, would be necessary. A few days afterwards, while the child was waiting in bed for her splint, I happened to examine her, and finding some important symptoms absent, and others not well marked, my suspicions began to be aroused concerning the correctness of the diagnosis. I got the child out of bed, and noticing that she walked with more freedom than when I first saw her, I asked her if she suffered pain in walking, and, if so, where? She replied she had very little pain now, as her heel was nearly well. On examining the heel I found a little ulcer over the tendo-Achillis; this had existed for two or three months, being very sore at the time of her admission to hospital, and now much improved by the rest obtained. The presence and history of this little ulcer were quite sufficient to account for all the symptoms. To prevent straining of the sore she walked on her toes, with leg and thigh slightly flexed. Owing to the flexed condition of the thigh, the fibres of the gluteus became relaxed, and there was partial obliteration of the fold of the nates, with some flattening of the buttock. The pain and swelling in the groin were due to an enlarged tender gland—produced, no doubt, by the irritation of the lymphatics at the seat of the ulcer. I need scarcely tell you that the order for the splint was immediately countermanded, and the mother duly informed that the rest and other treatment had improved her child so much that a splint would not be required. It was a gratifying communication to her, and she expressed her hearty thanks for saving her child from a cripple's fate. This simple case illustrates very forcibly the liability there is to be led astray by what, *primâ facie*, is strong

presumptive evidence of a certain well-defined disease; and the lesson to be drawn from it is that in all cases of the kind the patient should be subjected to a thoroughly searching and complete physical examination before hazarding a diagnosis.

In the first stage of spinal caries the symptoms are also very obscure; pain of an ill-defined character, and referred to regions remote from the spine, is the first warning given of commencing mischief; and I may here mention that at this early stage of spinal disease the case is generally treated by the physician, as the symptoms present point to diseased conditions that come more within his province than that of the surgeon. It is not an uncommon thing to find that cases have been treated for a long period for gastric derangement, and that it was only when actual deformity of the spine was manifest that the true nature of the ailment was discovered. In the same way cases of bronchial and laryngeal irritation have been drugged and sprayed, while the real offender, secretly doing its deadly work in the spinal column, was allowed to go on unnoticed.

A case came under my observation a few years ago of a young man who had been resident in England, and was sent home by his medical adviser, after four months' treatment for a kidney affection, in the hope that his native air would restore him. A careful examination of his case revealed a spinal caries in the dorso-lumbar region. I was able very clearly to trace the disease to an injury sustained three months before he began to complain. For treatment I recommended rest in the recumbent position. After a little the pains in the loins disappeared; later on jackets, at first of plaster-of-Paris, then of felt, were applied; and I was informed that in some time over a year he was about quite well. For a series of cases illustrating this aspect of the subject I would refer you to Mr. Hilton's classical "Lectures on the Diagnostic Value of Pain."

I have now, in a very desultory and superficial way, brought under your notice some points indicating the necessity for an accurate and early diagnosis in all cases of disease and injury, and we have seen that this can be accomplished only by obtaining a true history of each case, and by a careful consideration of all symptoms, both objective and subjective, after making a thoroughly complete physical examination. We have seen how wide of the truth single symptoms and even groups of such are sometimes apt to lead us; how a flexed thigh, flattened buttock, and a painful swelling in the groin, may exist from other causes than hip disease; how pain in the knee is not conclusive of knee mischief, or even of hip mischief, with which it is mostly associated, but may be due to rectal, sacro-iliac, or other pelvic mischief; how the first warnings of spinal disease manifest themselves, as pains in the regions of the chest, stomach, kidneys, or bladder; and considering all these facts, must we not be forced to the conclusion that it is only by the most

careful, thorough, and patient examination and study of each symptom and group of symptoms that we are likely to arrive at an accurate diagnosis.

I will now ask your attention for a moment to what follows as a rational sequence of our first proposition—viz.: "The adoption of a timely, judicious, and decided mode of treatment."

The early and accurate detection of disease and injury is of the first importance, for by the light thus obtained appropriate treatment can be more effectually applied. Up to this point direct benefit to the patient has not been considered, and although we sometimes meet with patients who take an interest in the niceties of diagnosis, and the study of pathological states, the majority come for treatment, which they want carried out quickly and successfully.

By "timely treatment" I mean that which is adopted as soon as the case is brought under the notice of the medical attendant. We know that, owing to the ignorance or carelessness of the patient or friends, cases are not always seen at their commencement—indeed, many not till considerable mischief of a preventable character is done. That, however, is not the fault of the medical man, whose responsibility begins only at the moment he sees his patient for the first time. When a diagnosis is made, treatment judicious and decided should at once be put in practice.

The habit of procrastinating when treatment is required, is a thing that cannot be too strongly censured, especially in cases of great urgency; the number of lives lost, and the amount of suffering entailed, by postponing treatment for even short periods, if it were possible to calculate such, would be appalling to contemplate. In apparently trivial cases, where symptoms are ill-defined, while not playing the part of alarmists, it is wise to give due caution against doing anything that might be injurious, or likely to develop mischief, until every suspicious sign of it had disappeared. One medical man, disdaining such slight warnings, assures his patients that they need not mind, that they will be all right again after a little. Another practitioner, of a more prudent disposition, advises them to observe caution, avoiding this or doing that, till all suspicious symptoms disappear, and should there be at any time the slightest retrograde tendency, to have their case again inquired into. I think you will agree with me that although in many cases the sanguine expectations of the one are verified, still, on the whole, there is less cause for regret by hearkening to the prudent warnings of the latter, who, anticipating mischief, subjects his patients to a timely and judicious treatment, and, next to the prevention of the disease or injury, does the best thing that can be done for them. In better-marked cases still, we sometimes see this tendency to make light of them, and not infrequently do we hear patients say: "I consulted Dr. A. or Dr. B., but he did not

think it would signify, so I paid no further heed to it." And do we not, unfortunately, but too often see painful cases of bone disease, spinal and joint disease, as well as various other affections, both medical and surgical, the outcome of this reprehensible practice of making light of, or ignoring, these primary, though faint, warnings of brewing mischief.

To conduct successfully, through the anxious and tedious stages of disease and convalescence, cases of morbus coxæ or spinal caries, is creditable alike to the patience, judgment, and skill of the surgeon—to save by an amputation a life endangered by a disorganised limb, or to preserve one of the members by a successful excision, are triumphs in which he may take a pardonable pride, but a greater triumph still, and one worthy of a higher meed of praise, is to make an early and accurate diagnosis of disease, and to crush it out in what I may term its embryonic condition.

Unfortunately this, the noblest and most useful quality of our calling, is the least recognised by those who most benefit by it—nay, more, I have known cases where the medical man was not alone not thanked, but strongly censured instead, for what were considered opinions too hastily expressed, and treatment unnecessarily imposed. Instances of this are, I am sure, familiar to all of us. A few years ago I saw, in consultation with a distinguished medical friend, a child who had well-marked symptoms of incipient hip mischief. She was immediately subjected to a decided line of treatment, which was rigidly carried out for a month or six weeks; by this time the joint was so much improved that the friends, doubting the opinion expressed by us, took her to a metropolitan surgeon, who assured them that there was nothing wrong with the child, that all she required was attending to her general health. While we might indulge in the consoling reflection that we saved that child by timely and decided treatment from the possible fate of a cripple's life, I have reason to know that we incurred the parent's censure for the expression of alarmist views and unnecessary restraint put on the patient. Did time permit, I could quote numerous instances of a like character, but I will only relate this striking one, showing the value of the public opinion on matters purely professional, told by Sir James Paget of a distinguished London surgeon who, while operating on a gentleman for strangulated femoral hernia, with great carelessness cut right into the intestine. Fæces flowed out, and all the miseries of a wounded intestine followed. After much anxious care, at last the patient recovered. His firm conviction was that by this very incision into his bowel he had escaped some dreadful calamity, and that nothing but the most extreme skill could have either made the incision into the bowel, or recovered him after it; and he presented the surgeon who had done this for him with a very handsome gold snuff-box.

For the very reason of this inability on the part of the public to judge rightly, it is all the more incumbent on us, rising above personal

considerations, to stand in their place and help them. In obviously well-marked cases, urgently demanding treatment, there can be no excuse for procrastinating; pressure of work, or want of confidence in one's power to deal with the case, is no justification for delay; deferring treatment on such grounds, or in the vague hope that by some lucky chance it will come to a successful issue, is reprehensible in the highest degree. Such cases should not be left uncared for one moment longer than is absolutely unavoidable; and if from any cause the necessary attendance cannot be bestowed on them by the medical man first consulted, he should seek the assistance of another, whose time is less occupied, or who could bring special knowledge and experience to bear on them. Not infrequently do we meet with cases, painful examples of the results of this procrastinating or diffident disposition of the medical attendant.

A short time ago I attended a poor fellow who suffered from urinary fistulæ and vesical catarrh; he was reduced to the lowest ebb by prolonged and intense suffering. Some months previously he got a fall on his perinæum, rupturing the urethra; this was followed by urinary extravasation. There were delay and indecision in dealing with the case, and it was only when the mischief was done that a second medical man saw it and adopted the proper treatment of making free incisions over the infiltrated area. It was too late, however; the whole of the integument covering the lower half of the abdominal wall, as well as the scrotum, sloughed, and the enormous extent of raw surface, with penis and testicles exposed, was, I heard, fearful to witness. I performed a cystotomy for the relief of the intensely painful bladder symptoms, which placed him in comparative ease for some months, and then he died. I give this as an example of the appalling and fatal results that may follow the neglect of a timely, judicious, and decided mode of treatment. Cases of ruptured urethra are common in hospital practice, and when seen soon after the accident, while the swelling and infiltration are confined to the perinæum, are easily and successfully dealt with. The practice I follow is to pass a sound down the urethra as far as the seat of mischief, and make a free deep incision on it, and multiple incisions about the part if its state demands such. I have never seen any of these cases go wrong when dealt with early and in a decided manner, and rarely have I seen constitutional disturbance or suffering of any consequence in connexion with them.

Another form of affection that terminates badly, if not dealt with in a similar way is periostitis. If seen in the very early stage, rest, elevation of the limb, perhaps cold applications, and general antiphlogistic treatment may arrest its further progress; but if not seen till a later stage, when there is great pain, swelling and tension of the part, and it be not dealt with vigorously, the danger to life and limb are very great. I have seen prolonged suffering followed by extensive necrosis, blood-poisoning

by which some lives were lost, and others placed in great jeopardy, and all for the want of a timely and proper incision.

Let me explain here what I mean by proper incision. Some men persuade themselves that when they make a puncture and draw blood they have complied with the requirements of the case. If their object is to draw blood and they get sufficient, well and good; but in cases such as periostitis, there can be no more mischievous practice. Owing to the swollen, congested state of the tissues, an incision that appears deep and bleeds freely is frequently useless, for its object is not attained, the periosteum is not reached, and what was meant for good is sometimes only the means of creating further mischief. The motive for interfering is to relieve periosteal tension, which if not accomplished will end in the death of the bone. Hence, to do this effectually it is necessary to pass the knife well down to the bone, and keep the blade in close contact while making the requisite free incision. In this way the tension of all the parts is relieved, and the treatment, so far, is judicious and thorough. The same may be said of cases of diffuse inflammation, when spreading under fascial or aponeurotic structures, so often seen in the extremities following injuries and operations, and it is unfortunately no uncommon thing to see poor creatures who have survived a protracted period of painful suffering, carry about with them a seamed, scarred neck, a clawed hand, or a crippled, useless limb—monuments of procrastinating habits or timid peddling surgery. Let me not be understood to convey that all such cases are the outcome of indifference or incompetency on the part of the medical attendant. Nothing is further from my mind. They may occur in the hands of the most competent surgeons, for the result may be due in one case to the fact that it was not seen till the mischief was done; in another to the dogged, ignorant obstinacy or fear of the patient to submit to the proper treatment; in others, again, to some defect in the organism, which prevented it responding to treatment, though most judiciously and efficiently applied. The two grand principles of "rest" and "relief of tension," on which depend the successful treatment of many diseased conditions, especially in surgical practice, cannot be too strongly enforced. It behoves medical men, then, while recognising their value, to see that they are carried out in a thoroughly efficient manner, so as to accomplish the object at which they aim, otherwise they are not alone powerless, but faith in their efficacy being shaken, much mischief may occur for want of their proper application.

Travelling with a professional friend a few weeks ago, I saw him intently and with evident satisfaction observing the back of his hand, on which were visible four linear scars extending the whole length of each metacarpal bone; he next vigorously put his fingers and hand through their various movements, and, finally, seizing mine, he squeezed it with

a force that, if it indicated the strength of his regard for me, left no doubt of my being very high in his estimation. He said, "It's all right again; I can do every thing with it; it is quite as strong and useful as ever." He was treated by me some time previously for a very bad form of inflammation of the hand, following an injury; it had been poulticed and punctured before he came up from the country to place himself under my care. The scars referred to were the result of the free incisions practised, and after which, with absolute rest and other appropriate treatment, he made an uninterrupted recovery.

This simple case forcibly illustrates the value of the efficient application of the principles already mentioned, and I am sure most of those about me now can record not one but many cases equally successful by the application of timely, judicious, and decided treatment.

In the great and important subject of joint disease and injury, the value of the application of these principles cannot be too strongly impressed on the minds of medical men, and we frequently see that, owing to want of attention to them, injuries, at first trivial, slowly but surely acquire a condition that very often ends in confirmed disease, deformity, or death. While I am prepared to admit that perverseness, gross ignorance, and prejudice on the part of patient or friends, often thwart the medical attendant in his endeavours to deal efficiently with the early stages of disease in joints, still I am forced to the conclusion that a great deal of mischief of a preventable kind is allowed to take place, owing to the fact that some medical men make light of, or do not appreciate the importance of, early and decided treatment in the first manifestations of disease in these structures.

And now, gentlemen, although many subjects present themselves to my mind in connexion with which the consideration of the propositions first made would be both interesting and instructive, I find that time will not permit it—indeed I feel bound to apologise for the length of time I have already detained you with what will appear to many, I am sure, very common-place matters, and I hope you will not consider that I have addressed my remarks to you as one who felt he was enunciating views that were not already as familiar to you as to himself. Believe me, I have too keen a perception of my own shortcomings, and too true an estimate of the high professional excellence of my brother-practitioners in Belfast, to address them in any such spirit; but you will admit that, owing to the anxiety and hurry entailed by increasing professional labour, we are all of us apt to overlook the little things both of principles and practice that are of the first importance in the every-day work of our profession, and that we can all benefit by repeated and sharp reminders of our backslidings in these matters.

While we are considering some of the important duties we have to perform towards our patients and the public, we are not to forget there

are other duties no less strictly demanded of us towards ourselves, our professional brethren, and the honourable calling to which we all belong. The elevation or degradation of the body depends on the aggregate of the acts of its individual members, and in proportion as they are honourable, useful, and enlightened, will it rise in general estimation. Hence, it is incumbent on each of us, by the faithful and conscientious discharge of his duties, by his high moral tone and dignified conduct, to aid in elevating it in its social status, and increase its power for well-doing; and, while acting thus his own part, he is not to be indifferent to his brother who, through carelessness, oversight, mayhap ignorance, fails in his duty to his patients or his profession, but should from mutual interest, as well as in common brotherly charity, hasten to shield him from the hard censure of an unsympathetic public.

Gentlemen, I do not know any means that is more likely to promote such objects more effectually than the Society I have the honour of presiding over this Session. Through it the scientific and social aims of our profession are promoted, interchange of views on the ever-varying questions of the day takes place to our mutual advantage, biassed opinions are altered or modified, a spirit of inquiry is fostered, our knowledge and mode of treating disease are brought more in line with the advanced practice of our time, and our local band is kept well in the forefront of the ranks of our profession.

The promotion of the more intimate social intercourse of its members is not the least important function of this Society. It has not been so fortunate in accomplishing this as one would wish; still we must endeavour, with the facilities at our disposal, to do what we can to encourage it; and I anxiously look forward to the day when a university or college club, in which the medical element will form no insignificant part, will be established amongst us to further still more this desirable object. I believe such an institution will promote the social elevation of our body, smooth any little professional acerbities, and exercise a healthy, restraining influence on erring members by bringing the weight of our united opinion to bear on them.

We have lately seen what the profession in Belfast and the North of Ireland can do when it wishes to put forth its strength. The noble reception it gave to the British Medical Association was the theme of praise and admiration of our numerous visitors, and redounded to the honour not alone of our local profession, but to that of the whole community. We cannot then plead incapacity. As a professional body we are strong enough, and capable of developing our present Society, or forming and fostering a medical club worthy of our body and the important community in which we live.

Whether emanating from these modest rooms or more pretentious halls, let the spirit of our Society be ever active in promoting the interests of

our body, both as regards our relations to one another as well as to the outside public; and let each member, acting in conformity with that spirit, play his part honourably and well. Let the senior members and those whom the propitious wave of circumstance, aided, perhaps, by ability and honest hard work, has landed into the pleasant places of our profession, sustain the dignity and prestige that are supposed to be attached to the position they occupy. Let remuneration for their services be commensurate with their position and the costly requisites and luxuries of their clients. Let them remember that accompanying such honourable and lucrative positions is also a responsibility towards their less favoured brethren. They should be the standards by which younger members would gauge their professional relationship with the public; and as it is with the learned profession of the law, when a counsel gets silk it debars him from a certain class of practice that becomes the right of the junior brethren, so it should be with us. Those fortunate members who have attained commanding positions should refrain from injuring the prospects of their junior brethren. Should they act in this manner, all interests will be served; the province of the general practitioner will not be encroached on; the labour of the consultant is lessened, while his remuneration is increased; and the patient, often valuing the services in proportion to the expense and difficulty in securing them, feels satisfied.

As regards the general relationship that should exist between all of us hard workers, whether specialists or general practitioners, let us try and be animated by a spirit of brotherly love and charity; let us bear and forbear with one another; let us, by kindly advice and practical assistance in times of need, lighten the burden that is imposed on us all, pressing with greater force on one than another; let us, by honourable, straightforward dealings in our complicated relationship to our patients and to one another, advance our own and our patients' interests and the honour and interests of our profession. Acting in this manner, our power and efficiency will be strengthened to enable us to carry on with unwearied vigour the great crusade against disease and injury that seem to be the inevitable inheritance of our common humanity.

TOPICAL APPLICATION FOR DENTAL CARIES.

Redier (*L'Union Méd.*) suggests the following mixture:—Tincture of benzoin, 1 drachm; tincture of opium, chloroform, creasote, each $\frac{1}{2}$ drachm. Cleanse the carious cavity, and introduce into it a small tampon of cotton soaked in the mixture. This is to be left *in situ* for a few minutes, and then removed in case relief is not obtained. The action of the remedy is said to be prompt and almost invariably successful.—*N. Y. Med Jour.*, Feb. 7, 1885.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, M.D., F.K.Q.C.P., F. R. Met. Soc.

Vital Statistics

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, February 28, 1885.

Towns	Population in 1885	Births Registered	Deaths Registered			Deaths from Seven Zymotic Diseases							Deaths from Phthisis	Death-rate per 1,000	
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa		From all causes	From seven Zymotics
Dublin, -	353,082	829	892	155	224	–	34	17	2	7	10	6	106	33·0	2·8
Belfast, -	219,222	472	489	90	91	–	9	8	2	8	7	14	81	29·1	3·0
Cork, -	80,124	163	199	15	66	–	–	–	–	14	3	3	30	32·3	3·2
Limerick, -	38,562	82	95	8	38	–	–	–	–	1	2	1	10	32·0	1·4
Derry, -	29,162	67	59	11	21	–	–	3	1	–	2	–	5	26·3	2·7
Waterford,	22,457	47	84	13	16	–	31	–	–	–	–	4	4	48·6	20·3
Galway, -	15,471	37	23	2	18	–	–	–	–	–	–	–	5	27·7	–
Newry, -	14,808	29	22	6	4	–	–	–	–	–	–	–	3	19·4	–

Remarks.

In the eight selected towns included in the foregoing Table the highest death-rates are 48·6 per 1,000 of the population annually in Waterford, 33·0 in Dublin, 32·3 in Cork, and 32·0 in Limerick; the lowest rates are 19·4 in Newry, 26·3 in Derry, 27·7 in Galway, and 29·1 in Belfast. The rate of mortality from seven chief zymotics ranged from 20·3 per 1,000 per annum in Waterford, 3·2 in Cork, 3·0 in Belfast, 2·8 in Dublin, 2·7 in Derry, and 1·4 in Limerick, to *nil* in Galway and Newry.

The recorded deaths represent a rate per 1,000 of the population annually of 21·2 in twenty-eight large English towns (including London, in which the rate was 19·7), 30·8 in the sixteen chief towns of Ireland, 29·3 in Glasgow, and 17·8 in Edinburgh. There is a decided decrease (from 24·4 to 21·2) in the mortality in the English towns generally; and in London it has also fallen considerably—from 24·0 to 19·7 per 1,000 per annum. It has fallen remarkably in Glasgow (from 34·1 to 29·3), and also in Edinburgh (from 23·4 to only 17·8). In the Irish towns

the rate of mortality has risen from 30·5 to 30·8. If the deaths (numbering 28) of persons admitted into public institutions from localities outside the Dublin Registration District are deducted, the death-rate of that district becomes 31·9, while that of the portion of the district included within the municipal boundary is 35·5. In London the epidemic of smallpox appears to be subsiding, for the deaths were 197, compared with 229 in the four weeks ending January 31, 1885. The weekly number of deaths from this disease since the beginning of the year have been 56, 42, 70, 58, 59, 60, 56, 44, and 37 respectively. The deaths from diarrhœal diseases in the same city, which numbered 39 in the four weeks ending January 31, were 35.

Acute febrile zymotics were returned as the cause of death in 88 instances in the Dublin district, compared with a ten-years' average of 129·7 in the corresponding period and 106 in the previous four weeks. The 88 deaths included 34 from measles, 17 from scarlet fever, 10 from "fever," 7 from whooping-cough, 6 from diarrhœal diseases, and 2 from diphtheria. The epidemic of scarlet fever continues to decline gradually, the deaths being 7 fewer than in the four weeks ending January 31. Of the 17 fatal cases, only 2 occurred in the South City Districts, 8 in the North City Districts, 1 in the Kingstown District, 1 in the Donnybrook (Pembroke Township) District, and 2 in that of Coolock and Drumcondra. Of the 10 deaths referred to "fever," 5 were ascribed to enteric fever and 4 to typhus, while in 1 instance the exact nature of the fever was either not specified or was ill-defined. The deaths from fever were 12 fewer than those registered (22) in the four weeks ending January 31. Thirteen children under five years succumbed to scarlet fever, including only 1 infant of less than twelve months. Six of the 7 victims of whooping-cough were under five years of age, including one infant of less than twelve months old.

Measles caused 34 deaths in Dublin, 31 in Waterford, and 9 in Belfast. In Waterford the epidemic of measles appears to be very deadly; in Dublin it is less dangerous to life but very wide-spread. Since the beginning of the year the weekly numbers of deaths have been 3, 3, 3, 5, 3, 5, 10, 11, and 8 respectively. Of the 34 victims to the disease, whose deaths were registered in the four weeks, 28 were under 5 years of age, including 3 infants of less than twelve months. The outbreak has fallen with special violence on the North City Districts, in which 25 out of the 34 deaths were registered. In No. 1 North City District alone there were 14 deaths from measles.

Scarlet fever was fatal in 8 instances in Belfast, and 3 in Derry. Diarrhœal diseases were credited with 28 deaths in the eight towns, compared with only 23 in the previous four weeks. In London the weekly registered deaths from diarrhœal diseases were 9, 6, 11, and 9 respectively.

In the Dublin Registration District 829 births and 892 deaths were

registered, compared with 856 births and 877 deaths in the previous four weeks. The births were those of 421 boys and 408 girls. The deaths of infants under one year were 155 against 132 in the previous four weeks; those of persons aged 60 years and upwards were 224 compared with 237 in the previous period.

The deaths referred to pulmonary consumption in the eight towns were 244, compared with 239 in the four weeks ending January 31. In Dublin diseases of the respiratory organs are stated to have caused 225 deaths, against an average of 259·1 in the corresponding four weeks of the previous ten years, and compared with 213 in the preceding four weeks. The 225 deaths included 159 from bronchitis (average = 199·4) and 32 from pneumonia (average = 33·2). Of the 159 persons who succumbed to bronchitis, 24 were infants under twelve months, whereas as many as 61 had passed their sixtieth year.

On Saturday, February 28, 1885, there were under treatment in the principal Dublin hospitals no cases of smallpox, 62 cases of measles, 48 of scarlet fever, 22 of typhus, 16 of enteric fever, and 9 of pneumonia.

The mean temperature of the four weeks was 42·8° in Dublin, 41·2° in Belfast, 44·7° at Roche's Point, Co. Cork, 41·0° at Glasgow, 40·6° in Edinburgh, and 43·9° at Greenwich. The minimal readings of the thermometer in the screen were 26·1° in Dublin, 26° at Belfast, 30° at Cork, 22·5° at Glasgow, 24·4° in Edinburgh, and 26·9° at Greenwich.

The weather was very cold during the first and third weeks of the period, exceptionally warm and unsettled during the second and fourth weeks.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N. Long.* 6° 15′ *W., for the Month of February*, 1885.

Mean Height of Barometer, - - -	29·543 inches.
Maximal Height of Barometer (on 28th, at 9 p.m.),	30·194 ,,
Minimal Height of Barometer (on 2nd, at 9 a.m.), -	28·740 ,,
Mean Dry-bulb Temperature, - - -	42·8°.
Mean Wet-bulb Temperature, - - -	40·4°.
Mean Dew-point Temperature, - - -	37·6°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·230 inch.
Mean Humidity, - - - - -	82·5 per cent.
Highest Temperature in Shade (on 26th), - -	58·4°.
Lowest Temperature in Shade (on 19th), - -	26·1°.
Lowest Temperature on Grass (Radiation) (on 19th),	22·0°.
Mean Amount of Cloud, - - - -	53·6 per cent.
Rainfall (on 19 days), - - - -	2·812 inches.
Greatest Daily Rainfall (on 16th), - -	·920 inch.
General Directions of Wind, - - -	S.S.W., S.W.

Remarks.

Although the mean temperature very closely corresponded to the average of the previous twenty years, the weather was very changeable—alternate periods of cold and warmth prevailing in alternate weeks. The rainfall and rainy days were both above average, and atmospherical pressure was considerably below average. The mean temperature deduced from observations taken daily at 9 a.m. and 9 p.m. was 42·8°; that calculated by Kaemtz's formula from the means of the daily maxima and minima was 42·7°—a value which is almost identical with the average mean temperature of the twenty years, 1865–84, inclusive, calculated in the same way (42·5°). The arithmetical mean of the maximal and minimal readings was 43·6°. On the 26th the screened thermometer rose to 58·4°, and on the 19th it fell to 26·1°—the grass minimum on this occasion being 22·0°. These were the lowest temperatures recorded in Dublin during the past winter. The rainfall amounted to 2·812 inches, and was distributed over as many as nineteen days. The average rainfall for February in the twenty years, 1865–84, inclusive, was 2·244 inches, falling on 17·6 days. The mean atmospherical pressure was only 29·543 inches, compared with an average for February in the ten years, 1871–80, inclusive, of 29·862 inches. The barometer fell to 28·740 inches at 9 a.m. of the 2nd, and rose to 30·194 inches at 9 p.m. of the 28th. The extreme range of pressure was, therefore, 1·454 inches, or nearly an inch and a half. This is a striking testimony to the cyclonic character of the weather experienced during the month. Snow, sleet, and hail were observed on the 17th and 18th. A solar halo was seen on the 12th. There was a fog on the 15th. Gales, or high winds, prevailed on several occasions. A lunar rainbow appeared on the evening of the 21st.

During the week ending Saturday, the 7th, very unsettled cold weather was recorded. Atmospherical pressure was throughout very low on the Atlantic coasts of the N.W. of Europe, and a series of deep depressions passed from S.W. to N.E. across the United Kingdom. At 8 a.m. of the 1st the barometer ranged from 28·45 inches at Sumburgh Head, in the Shetlands, to 29·93 inches at Toulon. On the night of the 2nd thunder and lightning occurred at Holyhead and Scilly in connexion with another deep depression. From the 3rd to the 6th inclusive the Dublin and Wicklow mountains were snow-capped, but on the last-named day temperature rose to 53·9°.

The south-westerly type of weather prevailed during the greater part of the second week. The barometer was relatively high over France, while depressions skirted the N.W. of Ireland and W. of Scotland in their passage north-eastwards. On Sunday, the 8th, a fall of half an inch of cold rain occurred in about five hours. On the night of the 12th

bright aurora was seen in the North of Scotland. In Dublin the mean temperature of this week was 46·0°, or 4° above the average.

Very severe winter-like weather was experienced in the third week over the greater part of the United Kingdom and in Scandinavia, whereas it was warm in France and Germany, as well as at first in Southern England. During the first two days of the week (the 15th and 16th) the upper clouds (cirrus and cirro-cumulus) were seen from Dublin to be travelling in an upper current from W.S.W., while the lower clouds came from E.N.E., and calms or light to moderate northerly or easterly winds prevailed. Temperature was low, except in the S. of England and on the Continent. On Monday evening, the 16th, rain began to fall in Dublin. This was succeeded by a remarkable snowstorm early next morning. By 9 a.m. the snow lay several inches deep even in the streets of the city. The rainfall in 18 hours amounted to *one inch* (1·001 inch). On Tuesday, the 17th, the thermometer did not rise above 36·6° in Dublin, and at night frost occurred, succeeded by showers of snow and hail on Wednesday. The following night was the coldest experienced this winter in Dublin—the thermometers fell to 26·1° in the screen and to 22·0° on the snow. During the next two days a very gradual thaw took place. On the latter day cirrus cloud again came up in a higher air-current from W.S.W., and on Saturday, the 21st, the wind rose to a gale from the southward, with a downpour of sleety rain. Almost throughout the week the distribution of atmospherical pressure and of temperature over Western Europe was anomalous and irregular. On Monday at 8 a.m. there was a difference of 80° in the thermometer readings between Biarritz in France (66°) and Haparanda in Sweden (—14°). At 8 a.m. of Thursday the difference between these stations was 83° (Biarritz=53°, Haparanda= —30°). Frost of exceptional intensity prevailed at the latter station—the 8 a.m. readings of the thermometer being 0°, —14°, 0°, —18°, —30°, —11°, and —13° respectively. On the other hand, the maxima at Biarritz were 75° on Sunday and 72° on Monday.

The south-westerly type of weather again prevailed during the last week, except on Saturday, the 28th, when the wind drew into N.W. and N. Temperature was high, and the wind was fresh or squally with passing showers at times. Near Dublin, indeed, very little rain fell, but in the W. and S. of Ireland the total fall was considerable—a state of things commonly observed when southerly to westerly winds are blowing. The mean temperature was 48·2° in Dublin—that is, 6° above the average and no less than 12·3° above the mean of the previous week. The last day of the month was bright and bracing, with a crisp, clear atmosphere.

PERISCOPE.

RECTAL FEEDING AND ALIMENTATION.

Dr. Wm. Julius Mickle gives some very useful hints in a paper on this subject published in the *Journal of Mental Science*. In using nutrient enemata he advises that:—Alcohol should not be added to albuminous food. If necessary, the bowels should previously be cleared out by a simple or aperient clyster, and a daily copious cleansing clyster is required in some instances. The bowels may have to be rested, but we must persevere if the first attempt fails. Where it is apt to return, the patient's best position to receive the enema is on the back or left side. The nozzle or tube should be comfortably warm, so should the food injected. The amount injected may sometimes with advantage be small at first, gradually increasing from 2 to 10 ounces. If the foods are ejected, we may try the plan (Dr. Hine's) of depositing them higher up in the viscus by means of elastic tubing and a funnel. But plugging the anus is often necessary, and has been done in many cases. Conflicting as are the results of experiments on the subject, he concludes that the rectum and colon digest but little, and that, even when inverse peristole is set up, the action of the bowel upon enemata is chiefly absorptive. If so, the food should either be introduced mixed with digestive substances, or else before administration should in some way or in some measure be digested, and ready for absorption into the venules and lymphatics of the intestinal walls. The following methods are all considered good:—*Leube.*—Three parts of meat to one part of pancreas, both finely minced and mixed with a sufficient quantity of warm water for clysis. Carefully remove all fat and connective tissue. The hog's pancreas is the favourite. *Rennie.*—To a basin of good beef tea, add ½ lb. shredded lean raw beef; ʒ j fresh peps. porci; ʒij. dilute hydrochloric acid; warm for four hours; stir frequently. Beaten egg or alcohol (?) may be added. *Catillon.*—A saturated solution of 19° C. of peptone of meat, 40 grammes; water, 125 grammes; laudanum, 3 to 4 drops; bicarb. of soda, 3 centigrammes. *Dobell.*—Cooked, finely-grated beef or mutton, 1 lb.; pancreatic emulsion, 1 oz.; pancreatic powder, 20 grs.; pepsin (pig's) 20 grs. Mix quickly, add half an ounce of brandy, and warm water sufficient to bring it to the consistence of treacle. *Henninger.*—Very lean meat, finely minced, is placed in a glass receiver; water and HCl. are poured on, and pepsin, at the maximum of its activity, is added. The whole is left in a water-bath or stove to digest for 24 hours at 113° F.; it is then decanted into a porcelain capsule, brought to the boiling-point, and while the liquid

boils, a solution of sod. carb. is added to it, until it shows a very slight alkaline reaction. Then the boiling liquid is passed through a fine linen cloth. The liquid is reduced in bulk in a water-bath. White sugar is added before administration. *Mickle.*—A pint of milk, with one-fifth or one-fourth of a pint of water, is carefully heated to 140° F. Two drachms of liquor pancreaticus (Benger's) and 20 grains of bicarbonate of soda in solution in one or two ounces of water, are added. The whole, in a covered vessel, is kept near the fire at 140° F. for an hour or an hour and a half, then thoroughly boiled for two or three minutes. Thus prepared, the food keeps for half a day or a day. In rectal medication Dr. Mickle has made extensive use of enemata of chloral hydrate in many cases of epilepsy and of epileptiform seizures. He gives thirty grains dissolved in two ounces of water, and has found it very useful.—*Med. and Surg. Reporter.*

KERATIN-COATED PILLS.

Dr. Unna, of Hamburg, has discovered a method of coating pills which is likely to prove even more useful than it is ingenious. The task which he set himself was to find a coating which would resist the solvent action of the gastric juice, but would dissolve in the small intestine. This he has succeeded in doing by the use of keratin, a substance extracted from the shavings of ox or buffalo horn. The shavings are first digested by artificial gastric juice (pepsin-solution with one per cent. hydrochloric acid), and are then macerated for weeks in ammonia. When the ammonia is driven off, a gummy solution of keratin is left, from which, by drying, keratin is obtained, in the form of shining bright yellow flakes. A pill which is to be covered with keratin requires to be prepared in a special manner. The medicine employed is first rubbed well up with cacao-butter, or tallow, with the addition of some indifferent powder, if necessary, and pills are made. The pills are then covered with cacao-butter, so as to prevent any of the medicine from being on the surface of the pill. When the pill is hard, it receives one, or, better, two or three coatings of solution of keratin. If the substance of which the pill is made render solution in ammonia inconvenient, a solution in glacial acetic acid may be used. Keratin-coated pills are insoluble in the gastric juice, but dissolve as soon as they enter the small intestine; and have, therefore, a special value in cases in which medicines which have an irritating effect on the mucous membrane of the stomach are to be administered for any length of time—for example, when arsenic, salicylic acid, creasote, copaiva, cubebs, tartar-emetic, and vermifuge medicines are prescribed. The method is further useful when medicines are given which are affected by digestion in the stomach, forming insoluble precipitates with pepsin and peptones—for example, tannin, alum, acetate of lead, subnitrate of bismuth, nitrate

of silver, bichloride of mercury, &c.; and, further, in the case of medicines which it is desired should enter the intestine in as concentrated a form as possible, and medicines which are given with the view of affecting favourably diseased conditions of the mucous membrane of the stomach, without exercising an irritating local action—for example, iron, quinine, arsenic in catarrh of the stomach arising from anæmia. In short, the uses to which this discovery may be put are evidently numerous, but the precise states in which their employment will be found of most value are yet to be ascertained by experience. Some of them, however, are so apparent that they must immediately suggest themselves to everyone. We hope that some of our leading pharmaceutists will take up the idea, and that keratin-coated pills will be readily obtainable when required.—*Brit. Med. Journal*, Jan. 17, 1885.

HYDRASTIN IN OCULAR THERAPEUTICS.

Dr. Sattler, of Cincinnati, Ohio, speaks favourably of the use of a solution of the hydrochlorate of hydrastin, one of the alkaloids of the Hydrastis canadensis, in certain affections of the conjunctiva. It is of value, he says, as a local tonic, stimulant, and irritant to the conjunctival membrane, and it neutralises or transforms chemically the altered secretions in the various other catarrhal processes and catarrhal stages of more serious lesions, and on this account is a valuable and reliable substitute for the various other stimulants and astringents. In many cases also, in which a simple tonic or stimulant effect is desired, with the least discomfort to the patient, it possesses advantages, and is therefore entitled to preference. Weak solutions, two or three grains, were instilled into the conjunctival sac three or four times a day. In several cases a ten and a twenty grain solution were applied, in addition, to the everted lids, and washed off with water and brush. Dr. Sattler insists on the importance of the white, colourless, and easily soluble salt of hydrastin being used, not the yellow salt of berberin, which is objectionable from its staining towels and handkerchiefs.—*Med. News* of Jan. 31, 1885.

ALBUMINURIA IN STRANGULATED HERNIA.

Dr. Joseph Englisch has published some remarkable observations on this occurrence in the *Wiener med. Jahrbücher* for 1884, Hefte 1 and 2. He concludes that, in certain strangulations of the bowel, certain derangements in the renal functions ensue, including albuminuria, and in extreme degrees anuria. In what manner these derangements are produced—whether through scanty water absorption, the loss of liquid by vomiting, irritation of the kidney by the absorbed altered intestinal contents, or by deranged innervation of the intestine—he leaves to future researches, by the aid of chemistry and instruments of precision, but he is inclined to ascribe them to the presence in the blood of absorbed

products of decomposition. The albuminuria thus caused has both a diagnostic and a prognostic value. When present, we may infer that a loop of gut is being strangulated, while, if the other symptoms of strangulation are present without albuminuria, we may conclude that it is an appendage of the bowel which is incarcerated, or a portion of the omentum, or that we have an inflamed hernia to deal with. The presence of the albumen also shows that the strangulation of the bowel has reached a degree which is dangerous to the individual. This is still more certain if there are found in the urine cellular elements derived from the kidney, its pelvis, the bladder, and ureters. The presence of the symptoms of collapse, with sudden increase in the quantity of albumen, announces the supervention of gangrene. The addition to the above of nervous symptoms of a decided character point to uræmia. As to treatment, where albumen is present, only gentle taxis should be used, and, should this fail, section should be performed, and experience has shown that resection of the bowel, under these circumstances, is often a successful operation.—*Medical News*, Jan. 3, 1885.

NEW METHOD OF REDUCING DISLOCATION OF THE LOWER JAW.

Dr. Massey writes (*Med. Times*, April, 1884, p. 583) that, by introducing the little finger into the ear, one can feel the joint of the lower jaw move quite easily. A case is related of a young girl, aged sixteen, who had noticed a contraction in the entrance to her right ear, which was caused two years previously by dislocating the jaw during a fit of yawning. Dr. Massey ordered the girl to force her little fingers into the ears whilst he manipulated with the articulation. The patient opened and shut her mouth rapidly six times, then a snap was heard, and the dislocation was at once reduced.—*Practitioner*, Jan., 1885.

PRESENCE OF SUGAR IN THE LIQUID OF ASCITES, IN CIRRHOTIC LIVER.

Arnozan (*Journal de Méd. de Bordeaux*) says that a relative or complete obliteration of the portal plexus, in cirrhosis of the liver, prevents the accumulation in this glycogenic gland, of the glucose absorbed on the surface of the intestines, in which case the glucose must pass into the general circulation, through venous anastamosis. A patient affected with cirrhosed liver, who has ingested a quantity of saccharine material, must necessarily become glycosuric. It is presumed that, under like pathological conditions, the liquid in ascites would contain glucose. Indeed, the serum in the blood of the vena portæ should be rich in glucose, conditional that alimentation has been, in whole or part, composed of feculent or saccharine snbstances. This hypothesis, it is said, was confirmed by the following case:—A patient affected with cirrhosis of the liver and non-glycosuria, was tapped twice, and the presence of sugar was demonstrated in the liquid abstracted. The researches of

Ottomar Rosenbach have proved that, contrary to the generally adopted opinion, sugar is *always* found in serous effusions, in quantities of $\frac{1}{10}$, $\frac{1}{8}$, even $\frac{1}{3}$. He generally analysed the serum in subcutaneous dropsies, in ascites, and in hydrothorax. He demonstrated it by the reaction of Trommer and Fehling's solution. The reaction should be essayed without delay, for the sugar disappears rapidly by fermentation, which can, however, be prevented by the addition of an antiferment. In all these cases no sugar was found in the urine; lymph-globules have also been found charged with sugar.—*St. Louis. Med. and Surg. Jour.*

A NEW COVERING FOR ELECTRODES.

Practical workers in medical electricity have doubtless occasionally experienced the disadvantages of the usual coverings of the electrodes. With these in mind, Dr. Massey conceived the idea of substituting absorbent cotton for the sponge or wash-leather commonly in vogue, and found it much more convenient and useful. It is applied to the brass disc in a few seconds after the manner of gynæcologists when covering their uterine applicators. A pinch of wool of sufficient size is laid on the face of the disc, and the edges pressed over and twisted around the shank by a twisting motion of the electrode. In a moment it is ready for use, and the covering may be rejected immediately after the application. Not the least of the advantages of this material for this purpose are its pre-eminent smoothness, softness, and neatness.—*Medical News*, Feb. 7.

A PERMANENT SURGICAL DRESSING.

M. Marc Sée contributes an article upon this subject to the *Bull. de l'Acad. de Méd.*, in which he details the results of his method of treatment in several cases. His mode of procedure is briefly as follows:—After finishing an operation, and just before tying the sutures, he sprinkles over the surface of the wound about a drachm of subnitrate of bismuth, which at once stops the oozing by forming a thin, dry layer, occluding the mouths of the small vessels. After introducing a drainage-tube, he closes the wound with quilled sutures, small rolls of iodoform gauze being substituted for the ordinary quills. The line of incision is then covered with a layer of bismuth, and a dressing of carbolised gauze is applied. It is not necessary to disturb this dressing until it is time to remove the sutures or drainage-tube. The advantages asserted for bismuth are its cleanliness, its property of absorbing fluids, the fact that it does not act as a foreign body when interposed between the lips of a wound, and, lastly, its cheapness. Stress is laid particularly upon the fact that it is rarely necessary to disturb the dressings during the process of healing.—*N. Y. Med. Jour.*, Feb. 7, 1885.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Wyeth's Compressed Tablets.

Messrs. Burroughs, Wellcome, & Co., of London, have submitted to us samples of ten different varieties of Wyeth's now well-known "Compressed Tablets," compactly arranged in bottles, well stoppered, and supplied with cotton-wool filters, in an exquisitely neat and portable box. The samples consist of several tablets already in extensive use—such as those of chlorate of potassium, chlorate of potassium and borax, bicarbonate of potassium, chloride of ammonium, and "soda mint." Besides these there are the more novel tablets of salicylate of sodium, permanganate of potassium, bisulphate of quinine, and those called "peptonic" and "compound cathartic."

The firm call special attention to the compressed permanganate of potassium tablets as an especially desirable form for the administration of so unstable a drug, and one which is incompatible with almost all pill excipients or coatings. Each tablet consists only of one grain of the permanganate, and its adhesion is secured simply by the force of compression. It is right to mention that in the *British Medical Journal* for Feb. 7, 1885, Mr. Frederick Simms, of London, draws attention to the occurrence in two patients of local ulceration of mucous membranes with which these permanganate tablets came in contact. He adds, however, that both patients were much out of health, and consequently of low vitality. Nevertheless, it is quite evident that a certain amount of caution is requisite in prescribing so active an oxidising agent as potassium permanganate.

The tablets of chlorate of potassium and of this salt with borax are firmly compressed so as to secure the advantage of gradual solution in the mouth in the form of a concentrated and continuous gargle. The tablets which are intended for gastric medication are less firmly compressed, and so will readily disintegrate in the stomach. The compressed bisulphate, or soluble sulphate, of quinine will dissolve in ten times its weight of water in a very few minutes.

An extensive use of many of Wyeth's compressed tablets, now distributed over several years, justifies the opinion that they are not less effective than elegant, and that in them valuable therapeutical agents have been offered to the profession in the most compact and portable form it is possible to produce.

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MEDICAL SCIENCE.

MAY 1, 1885.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XVII.—1. *Complete Excision of the Clavicle for Tumour (Osteo-Sarcoma).* 2. *Partial Excision of same for Necrosis.*[a] By W. I. WHEELER, F.R.C.S.I.; Ex-President and Member of Council, R.C.S.I.; M.D. and Master of Surgery, Dublin University; Member of the King and Queen's College of Physicians; Fellow of the Academy of Medicine, and ex-President of the Surgical Section; Surgeon and Lecturer on Clinical and Operative Surgery to the City of Dublin Hospital.

ENTIRE or even partial excision of the clavicle—the girdle bone of the shoulder—is an unusual operation, and one that surgeons are not often called on to perform. Having regard to its rarity, I have decided to bring before this Academy the histories and result of two cases—one of complete, the other of partial, excision of the clavicle.

Unfortunately in representing the first case I am only enabled to produce the cast, the specimen of it having been destroyed:—

CASE I.—M. B., a native of Wexford, aged forty-three, was admitted into the City of Dublin Hospital under my care in 1874, suffering from a tumour of considerable size on the left collar bone, extending over its entire length, with the exception of about three-quarters of an inch of the sternal end and an inch and about a half of the acromial extremity. It was dense and firmly attached to the bone, occupying the anterior inferior and part of the posterior inferior triangles of the neck. It hung

[a] Read before the Surgical Section of the Academy of Medicine in Ireland, Friday, March 20, 1885.

down over the inferior or pectoral edge of the bone, and had the appearance of being part of the clavicle itself. Within the patient's recollection no hurt had in that region been occasioned, except a slight blow which he received by having a door forcibly pushed against him. He was a spare, thin man, his height about 5 feet 7 inches, weighing about 10½ stones. His countenance wore an anxious and careworn expression. He complained of some pain down his arm and in his hand. The latter was sometimes œdematous, resulting, probably, from the pressure of the tumour on the subclavian vein.

After due deliberation and consultation with my colleague, Mr. Tufnell, I determined to remove the clavicle, and consequently, the patient having been fully anæsthetised, I made a concave incision downwards along the clavicle from the sternal articulation on the opposite side to the extremity of the acromial process, and I reflected both up and down the integument and fascia. The clavicular origin of the sterno-cleido-mastoid was also divided, along with the other necessary muscular structures. I next opened the acromio-clavicular articulation, and lifting up the bone by means of a *lion* forceps, I detached the costo-coraco-clavicular ligament and the subclavian muscle. Consequent upon the upward extent of the tumour I found it necessary to make a vertical incision extending into the posterior superior triangle of the neck, and by careful dissection and manipulation separating each attachment with the greatest care, so as to avoid the large vessels directly beneath. Both the subclavian vein and artery were easily recognisable, as also the cords of the brachial plexus. Fourteen ligatures were applied—two on the external jugular vein. The supra-scapular artery (which was much enlarged) was also tied. A few small vessels were twisted. All hæmorrhage having been controlled, the wound was brought together by interrupted sutures. A suitable pad producing necessary pressure was placed upon it. The patient's arm was bandaged to his side, and he was replaced in bed. No appreciable amount of suppuration ensued; free drainage was maintained; the wound, however, closed slowly. The man did not leave the hospital for seven weeks after the operation, by which time the incision had completely healed.

I saw this patient three months subsequently at Kingstown. He was pale and anæmic. He suffered from cough, and presented the appearance of one who ere long would develop phthisis. He was then able to use his arm and shoulder with tolerable facility, and but for the condition of his general health he could have earned a livelihood.

To my agreeable surprise I was accosted last May in Sackville-street by him. He had just returned from America, and was looking well, having gained both flesh and strength. I then had an opportunity of seeing the result of my operation. To an ordinary observer the man had every power as though the clavicle had not been removed, but when exercising a forward motion of his arm the scapula, instead of moving

circularly, glided on the ribs. I saw him once since then, when he promised that he would appear here in the event of my requesting him to do so.

The second case is not, comparatively speaking, possessed of so much interest. The operation consisted of the almost entire removal of a necrosed clavicle. It must, therefore, be correctly classified under partial excision :—

Case II.—This patient, a female, also a native of Wexford, is represented, by her history, as having been suddenly seized with pain in her left collar bone. The pain was acute enough to deprive her of sleep for weeks. It resulted in a large abscess, which eventually burst.

When the patient was admitted there were three sinuses leading down to the diseased bone. Having determined to remove the source of irritation, I made an incision over the clavicle, as in the case just recorded, and having separated the attachments of the subclavian muscle, costo-coraco-clavicular ligament, and a portion of the clavicular origin of the sterno-cleido-mastoid muscle, I (with a cutting forceps) divided the bone at the sternal end close to the articulation and at the external side about one inch from the acromial articulation. This patient progressed rapidly, and is now living in New Ross. There has been no sign of regeneration as far as I can learn. She has easy motion of her shoulder and arm.

The bone I removed is in the Museum of the Royal College of Surgeons.

My reasons may be questioned for not endeavouring to preserve the periosteum; that thus a chance for regeneration might be given—a result which has been known to occur in similar instances. Those reasons were twofold. In the man's case I deemed it inexpedient, my desire being to remove the bone in its entirety and not to leave remaining any portion either of it or of its covering. It was from the latter that the tumour had undoubtedly sprung. In the female's case the periosteum was destroyed, except over a very small portion of the sternal and acromial end of the bone which remained.

In treating of excision of the clavicle many surgical writers fail adequately to emphasise the magnitude of such procedure. Explanation for this may not unnaturally be found in the surmise that those recorders have neither performed the operation themselves, nor possibly have they even seen it performed by others. Truly, Mr. Erichsen well describes it as one of the most hazardous operations in surgery. The operator is in close proximity to the subclavian vein and artery, also to the pleura, being only separated from it by the thoracico-cervical septum. He is close

to the phrenic nerve, the common carotid artery, and, if operating upon the left side, he is near to the thoracic duct, which in Mott's cited case was exposed, whose operation was for an osteo-sarcoma; but, although generally looked upon and quoted as a complete excision, it was not such, since, in the published account of the operation, it is related that the acromial end of the bone was not interfered with, and the autopsy made years afterwards proved that the portion left measured one and three-quarter inches. Yet four hours were occupied in performing this operation, and forty ligatures were applied for the purpose of arresting hæmorrhage.

The necessity for excision of the clavicle, either partial or complete, appears to arise in the following cases:—Necrosis, compound fracture, tumour, gunshot injury, and in dislocation, for which the sternal end of the bone has been removed by Davie, of Bungay. M'Crearry, of Kentucky, appears to have been the first who removed the clavicle in its entirety; although Remmers has been spoken of as performing complete excision in 1732, the operation really was only partial removal.

Statistics of extirpation of the clavicle have been published by O. Heyfilder, the late Dr. Otis, and Professor Agnew; but in my opinion the most reliable are those by Ashhurst, since many of those quoted by Otis and Agnew were only partial excisions.

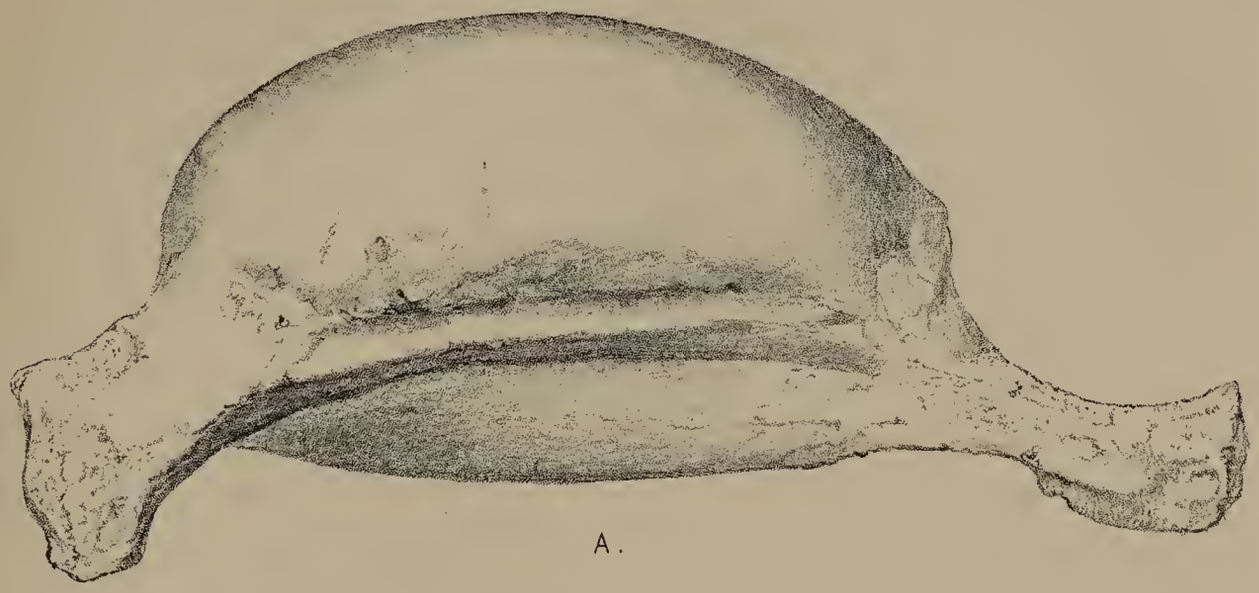
Ashhurst gives 28 complete excisions, of which only 6 proved fatal, making a mortality of less than 22 per cent.; but to this conclusion I object, inasmuch as in one of the cases he accredits with recovery—that of Dr. Curtis—the disease had returned within two months after the operation.

Of the 28 cases, 7 were for necrosis, 8 for caries, 2 for cancer, 4 osteo-sarcoma, 1 malignant disease, 1 enchondroma, 2 gunshot, 1 injury, 1 osteitis, 1 tumour. Of those that died, 1 enchondroma, 2 gunshot, 1 necrosis, 1 caries, 1 osteo-sarcoma.

Of Professor Agnew's 34 cited cases, 10 were for cancer, 5 for necrosis, 5 for osteo-sarcoma, 6 for malignant disease, 2 for shot injury, 1 for exostosis, 2 for tumour, 1 for injury, 2 unknown.

Of the partial excisions, including such formidable cases as Mott's and Barlett's, there are 74 recorded, of which 59 recovered and 10 died, the result in 5 being unknown—the mortality of the known cases, therefore, was but 14·5 per cent.

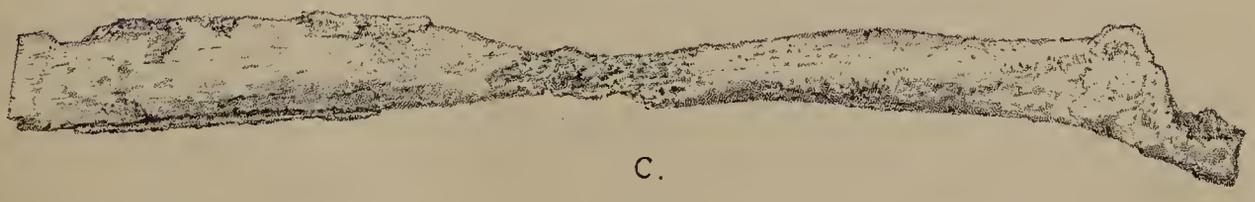
The lithographs A and B faithfully represent the clavicle and tumour attached, and that marked C the clavicle removed for carious disease.



A.



B.



C.

FORSTER & Co., Lith., DUBLIN

MR. WHEELER ON EXCISION OF THE CLAVICLE.

A & B—Excision of the entire Clavicle for Osteosarcoma.
C—Partial Excision of Clavicle for *Caries*.

ART. XVIII.—*On the Treatment of Uterine Fibro-Myomata.*[a] By THOS. MORE MADDEN, M.D., F.R.C.S.E.; Obstetric Physician Mater Misericordiæ Hospital; Physician to Hospital for Sick Children; Consulting Gynæcologist Dublin Provident Infirmary; Vice-President British Gynæcological Society; formerly Examiner in Obstetric Medicine and Gynæcology, Queen's University, Ireland, &c., &c.

THE prominence into which abdominal section has recently come in the treatment of uterine tumours by hysterectomy, oöphorectomy, and other intra-peritoneal operations, unquestionably deserves the special consideration of our division of the Academy of Medicine. I therefore submit the following observations on the treatment of myomata by those various methods, old and new, of which I had experience, mainly in the hope of inducing the discussion of a subject of as great practical importance as any that could engage our attention.

The progress of gynæcological surgery during the past decade is well exemplified not only in the improved treatment of intra-uterine tumours, but still more so in the bolder operations by which even the largest sub-peritoneal and intramural fibromata may now be removed, or arrested in their development.

These objects are attainable either *per vias naturales* or through abdominal section. In the former method are included removal by écrasement, thermo- and galvanic cautery, hemp saw, bistoury, polyptome, or curved scissors, enucleation, and traction, as well as vaginal hysterectomy, and oöphorectomy. Amongst the latter are abdominal hysterectomy, myotomy, or partial laparotomy and oöphorectomy.

The special applicability of these procedures, or of their various modifications, must be mainly determined by the physical character and position of the neoplasm, and the general condition of the patient in each case.

In the first place we shall refer to the curative results obtainable from some of the more generally indicated and safer intra-uterine methods of removing fibro-myomata. Secondly, the special advantages and special risks of the treatment of these tumours by hysterectomy, myotomy, and oöphorectomy, will be considered.

As I am unable to illustrate these observations in the manner which has recently become popular, by referring to my cases in

[a] Read in the Obstetrical Section of the Academy of Medicine in Ireland.

series of thousands, and as any lesser number would, I presume, be now regarded as beneath notice, I shall not attempt here a statistical summary of my experience. But I may venture to observe that it cannot be very slight, inasmuch as it extends over a period of nearly seventeen years, of actual gynæcological work, during each year of which I have almost daily had to deal with cases of fibro-myoma in hospital, dispensary, and private practice.

In the vast majority of instances the uterine tumours that come under our observation are submucous, and more frequently pedunculated, or semi-pedunculated fibro-myomata. The latter, whether intra-uterine or extending into the vagina—or, in other words, polypoidal—may be readily removed by the simplest of all operations—namely, the division of the pedicle, either by écraseur, polyptome, bistoury, or curved scissors, and subsequent extraction.

Uterine Dilatation.—Before, however, any intra-uterine surgical treatment can be attempted in such cases, whether by écrasement or by enucleation, the cervical canal and cavity of the uterus, if not already sufficiently patulous, must be first so expanded by mechanical means as to allow of the necessary local manipulations. For this purpose an ancient, but long disused, method of gradual dilatation with sponge tents was reintroduced into practice by Sir James Simpson, and down to the time of the late Dr. Marion Sims no better way of opening the uterine cavity for examination or treatment than the use of sponge, laminaria or other equally slowly expanding tents was known. So many, however, were the objections to all these that it must be admitted that few greater practical improvements have been effected in recent intra-uterine surgery than the method of rapid cervical dilatation now available either by the use of Hegar's or Lawson Tait's dilators, or by the skilled finger of the surgeon, which is, I believe, by far the best of all instruments for this purpose. Rapid dilatation is especially applicable in the case of intra-uterine tumours occurring in pluriparæ, whose uterine contractibility has been further diminished by the hæmorrhage, consequent on the neoplasm. In such cases the uterine cavity may generally be readily and rapidly laid open by putting the patient under the influence of anæsthetics, then firmly, but gently, introducing our right index into the cervical canal, and afterwards crowding in finger after finger until the canal is rendered completely patulous.

In some instances, however—more particularly in the case of

sterile patients, in whom the cervix has not been taken up by the development of the tumour—immediate dilatation may be quite impossible; in such cases, therefore, we must still avail ourselves of expansion by the simultaneous use of a number of sea-tangle bougies.

Écrasement.—Any submucous fibro-myoma which has either become pedunculated, or which protrudes so far into the uterine cavity as to afford possibility of encirclement at its point of projection from the uterine wall, may be removed by écrasement with a strong steel or piano wire—the superiority of which over any form of chain or wire rope, or other method of dividing the pedicle, has been demonstraded by Dr. Kidd, whose procedure in this respect I have followed in many instances.

Enucleation.—This operation, although usually restricted to submucous tumours, is, in my opinion, applicable to all fibro-myomata, whether submucous or more deeply imbedded in the uterine parenchyma, which, from the position and size of the neoplasm, are accessible and capable of extraction *per vias naturales.* If this view should be accepted, it would obviously provide an alternative and, as I believe, a safer operation in some of the cases in which hysterectomy and other intra-peritoneal operations are now advocated. Every myoma is primarily at least histologically undistinguishable from the uterine structure in which it originates, and is converted into a fibro-myoma or fibroid only by the gradual development of its connective or fibrous tissue. Before this process is accomplished—and we are seldom consulted sooner—the tumour also, as a general rule (to this, however, there are many exceptions) becomes encapsuled, or distinctly separated by an intervening layer of cellular tissue from the uterine parenchyma in which, as already said, it originated, and from which, however deeply imbedded, it can in most cases be shelled out and removed, or enucleated.

The operation by which this may be accomplished is a very simple matter. In the first place, as for écrasement, the cervical canal must be previously dilated, the patient placed in a semi-prone lateral position and etherised. Next, the uterus should be washed out with a warm carbolised solution, so as to diminish its vascularity as well as to render it as aseptic as possible. Then a free incision may be made through the endo-uterine mucous membrane and capsule into the most prominent part of the tumour. This is now seized with a strong vulsellum, by which

firm traction is made downwards in the direction of the pelvic outlet, whilst at the same time with the operator's finger—or where this cannot reach, then with either a curved silver spatula or with Thomas's spoon forceps—all adhesions around the tumour are broken up. Lastly, the fibroid by traction with the vulsellum from below, aided by firm pressure from above, is forced out of its bed and extracted either with the forceps or by splitting into sections that may readily pass through the vulva at outlet. By this operation I have repeatedly removed not only large submucous fibro-myomata, but also interstitial, or in some instances partially subserous, tumours. As, however, the feasibility of this procedure in the treatment of any deep-seated mural or partially sub-peritoneal fibroid is not generally recognised, I may here cite a somewhat remarkable instance of this kind in proof of the occasional curability of such cases, even, under very untoward circumstances, without either abdominal section or vaginal hysterectomy.

An unmarried woman, aged thirty-eight, who, until the day of her reception into the hospital, had been able to follow her avocation as cook in a large hotel, was admitted under my care. For the preceding two years she had been complaining of continual pain in the back and sense of pelvic weight, debility, leucorrhœa, and slight menorrhagia. These symptoms had gradually increased, but at no time was the menorrhagia very urgent, the changes merely lasting five or six days, and returning every three weeks; nor was there any hæmorrhagic discharge in the interval. On admission her chief suffering was from distressing dysuria—so great that she had been obliged for some time to visit a medical practitioner every day to have a catheter passed. She also suffered from frequently-repeated and generally futile calls to defecation; and, in addition to tenesmus, had slight prolapsus ani. Her feet and legs were œdematous, and she complained of great pain along the course of the left sciatic nerve.

The vagina was small and the hymen unruptured. On recto-vaginal examination the uterus was apparently completely retroflexed, the hollow of the sacrum being occupied by a large globular tumour extending up as high as the finger could reach and pressing downwards into Douglas's space. On examination with the sound, which passed in upwards of six inches anteriorly, it was evident that the double compression of the rectum and neck of the bladder was caused by a uterine tumour. To

discover the position of this growth the cervix was packed with five sea-tangle tents. On the removal of these next morning the uterine cavity was fully laid open, and as the tumour was interstitial, it was necessary to dissect it out from the posterior wall, in which it was situated, and where it had developed outwards, so as to have become in great measure sub-peritoneal, the posterior surface of the growth being covered merely by a thin capsule of the uterine structure. In the separation of the tumour, the uterine tissue—which had become disorganised by the pressure of the morbid growth, and was, as usual in such cases, extremely soft and friable—was unavoidably lacerated. This rent extended downwards and backwards through the outstretched roof of the posterior vaginal *cul-de-sac*, and left a wide opening into the abdominal cavity. As soon as the tumour now shown (which, as may be seen, was as large as the fœtal head at the seventh month) was extricated, which had to be effected by the midwifery forceps, a large coil of intestines came down, filling the vagina. These were immediately returned, and the patient being then in such a condition of collapse that no attempt could be made to close the laceration by sutures, it was merely plugged with a large sponge, so as to prevent for the moment any further prolapse of the intestines. A drachm of ether was injected hypodermically, and a little brandy and tincture of opium thrown into the rectum. Her pulse, which had been almost imperceptible, became a little stronger, and she was removed to bed and there surrounded with hot jars, &c., with the faintest hope of reaction. This, however, took place, and a couple of hours later her pulse was fairly recognisable, and her aspect improved.

On the second day severe metro-peritonitis set in, and for seven or eight days afterwards her life hung in the balance. It is needless here to dwell on the treatment pursued, which consisted mainly of opium and small doses of mercury, hydrocyanic acid draughts, &c., with the usual local applications—namely, leeching on two occasions, and continual use of fomentations or anodyne poultices to the abdomen, together with warm antiseptic vaginal injections. The vagina was plugged with sponges wrung out of weak carbolic solution. The daily changes of these were effected under carbolic spray, an atmosphere of which was maintained about her.

For some days she suffered from incessant retching and hiccough, which were controlled by hydrocyanic acid and ice.

By the mouth she was allowed only iced champagne in very homœopathic doses, her nourishment for ten days being enemata of beef extract with a little brandy and arrowroot. It is unnecessary to follow the daily notes of the case further than to say that after the subsidence of the peritonitis, from which she was not free for many days, it was found requisite to continue the vaginal plugging for another week, when sufficient adhesion was formed to allow its discontinuance. After the operation her bowels were kept confined for as long as possible. At the end of three weeks she was able to sit up, and a week later was sent to the Convalescent Home at Stillorgan, whence she returned to her former occupation, and is now again employed at the hotel from which she was sent to the hospital.

It is hardly necessary to observe that the enucleation of any fibroid, especially of one deeply intra-mural, is never devoid of considerable danger. But this danger is, we believe, less than that of any other of the operations which are more generally sanctioned for the same purpose. The risks of enucleation are—firstly, that, as happened in the case referred to, the tumour may have so thinned out the uterine wall behind it that this may be ruptured during the operation, and thus probably cause immediate death from shock or hæmorrhage, or subsequently from metro-peritonitis or septicæmia. Even where the integrity of the uterine wall was not affected, I have seen death from the latter cause follow the enucleation of a large fibroid.

Hence, it would be impossible to lay too much stress on the necessity of strict antisepsis, not only during the operation itself, which should always be Listerian, but also in the after-treatment by carbolised injections, &c., until the uterine wound has become sealed. Nor, in my opinion, should the operation be ever undertaken by any surgeon who does not believe in the efficacy of the antiseptic system, and who has not time and patience for personally carrying out the subsequent treatment of the wounded uterus in accordance therewith.

Removal by Traction.—In the case of those deeply-imbedded myomata which are not encapsuled we may, in some instances, as shown by the specimen that I have exhibited, succeed in their removal by the operation which is recommended by Dr. Emmet, not only in these cases but also in the treatment of other fibro-myomata, in which I would myself prefer to attempt enucleation. The object of Dr. Emmet's operation, which he terms

"removal by traction," is the immediate conversion of the tumour by tractile force from an intra-mural, or sessile, into an intra-uterine pedunculated, or polypoidal, form. With this view, Dr. Emmet says:—"For the relief of these cases it has been my practice to excite uterine contraction by making traction on the growth in the direction of the uterine outlet. This action I have continued until the tumour becomes pedunculated, from being crowded out of its bed by muscular contraction closing in around and behind the mass.

"I recommend as a principle of practice to delay all surgical interference as long as possible. But so soon as the tumour presents at the os, and this begins to dilate, we then have proof that a reasonable amount of uterine muscular tissue remains to aid us. As soon as the vagina is occupied by a portion of the tumour, the operation for its removal cannot be long delayed, for it becomes then a question of but a few hours, as a rule, before blood-poisoning may supervene.

"Whenever the operation has been once commenced, there is but one course to follow, in removing the entire tumour, as the one attended with the least evil and risk to the patient. Whenever the tumour can be forced out by uterine contraction as rapidly as it can be removed at the vaginal cut, the operation will be attended with but little risk of life. In my experience, so far, there has been no greater disturbance than that attending any ordinary case of instrumental labour whenever the tumour has been brought down to a pedicle and then divided. Our purpose is at first to excite uterine contraction by traction on the tumour, and this stimulant is maintained as it is being removed piece by piece from the vagina. As there is no fear from hæmorrhage, since the supply of blood is cut off as soon as the uterus begins to contract, our best means for removing the tumour is by a pair of blunt-pointed scissors, curved somewhat on the flat side. The operation is best begun by passing a slip-knot high up around the mass, which is to be held by an assistant, to steady the uterus, and for making traction. After having removed the portion which first filled the vagina, it is best to follow afterwards, as far as possible, the course of the uterine canal. The advantage is twofold, since the portion projecting into the canal, with the capsule-like covering, is firmer, and by removing first the tumour at the most distant point, the line of attachment becomes narrowed as the uterine cavity can be lessened.

"When the tumour has been removed, with all shreds or loose portions within reach, it is important to wash out the cavity thoroughly. It is best to use very hot water, for it is a prompt exciter of uterine action, and by prolonging the injection we can thoroughly empty all the capillaries within reach of its direct influence."

I have here quoted Dr. Emmet's account of his operation at some length, inasmuch as its results have been most successful in his own hands and in the practice of others who have closely followed his directions for its performance. Moreover, its results have been favourable in many instances in which the character or position of the tumour would render its removal by enucleation impracticable; but in the case of distinctly encapsuled fibro-myomata, more especially if submucous, I still think enucleation a more generally feasible and safer operation.

Abdominal Hysterectomy—Myotomy—Oöphorectomy.—Abdominal section has now come into such use in the treatment of uterine tumours, whether for their removal by hysterectomy and myotomy, or for the arrest of their development by oöphorectomy, as to require special consideration. The favour with which these intra-peritoneal operations are regarded by some surgeons has mainly arisen from the successful results of ovariotomy in modern practice; but whether the parity of treatment suggested in some instances by the symptomatic resemblances between uterine neoplasms, especially fibro-cystic tumours and ovarian growths, from which they are pathologically so dissimilar, is practically justified or not, is one of the most important questions that can engage our attention. Nor, whilst availing ourselves of the recent experience of those who may be regarded as pioneers in a still unsettled region of gynæcology, can we unhesitatingly adopt the too hasty generalisations founded on data so one-sided and as yet necessarily imperfect. We may therefore briefly consider the results of abdominal operations in the case of fibromata generally, and then refer more particularly to the various procedures included under this heading.

In the first place, Mr. Lawson Tait's recent address on one thousand abdominal sections must be referred to; for, whether we agree or disagree with Mr. Tait's views, we must all recognise his special experience and operative skill, as well as the unrivalled pertinacity with which he has maintained his convictions in spite of the disapproval of many other specialists in this branch of surgical practice.

Amongst the cases reported on by Mr. Tait are included the removal of the uterine appendages for myoma in 99 instances, with 7 deaths; hysterectomy, in 54 cases, with 19 deaths; and one enucleation of a myoma which proved fatal. Thus we have in all 124 completed abdominal operations bearing immediately on our present subject. From the same statistics it may be gathered that Mr. Tait has, moreover, had no less than 30 incomplete operations of this kind—17 of which were in cases of uterine, or unspecified but non-ovarian, tumours, which, after the opening of the abdominal cavity, further procedure had to be abandoned. Of these incompleted operations Mr. Lawosn Tait thinks that he "may speak with a certain amount of satisfaction," though from what he derives this contentment I am at a loss to understand, as his mortality in them was 50 per cent.:—"This mortality," he naively observes, "is of course heavy, and the results in the great majority of those who survived the operation were very unsatisfactory, though in some the disease has been arrested apparently for an indefinite time. I have no doubt now that in many of those cases I might have finished the operation—in fact, I know I could, but I always had a horror of a patient dying on the operating table, and from that distressing incident I have hitherto been entirely free. I now think that it would have been better even to have had such a disaster, and to have finished a large number of these operations."

The journal from which I have just quoted contains other evidence of the spreading cacoethes operandi, prevalent amongst abdominal sectionists, by the Birmingham School. Thus Dr. Savage, in reporting upwards of a hundred cases of abdominal section, undertaken within a year, boasts that he performs this operation in every case which he has "the opportunity of operating on," without "the slightest attempt at the selection of cases, and as choosing the most suitable and rejecting those which did not seem to promise to be successful." Nor does he hesitate to admit that, had there been such selection of cases, he would have had fewer deaths of patients on whom he "operated with the idea of giving them the slight chance of life the operation afforded, knowing well beforehand how slight that chance was."

Dr. Keith has recently recorded thirty-eight hysterectomies with only three deaths. In the *American Journal of Obstetrics*, Dr. Bigelow has, with great research, collected from all available sources 359 similar operations, of which 227 resulted successfully, whilst 132 patients died. With regard to this admitted mortality,

greater than one in every three operated on, we may well ask ourselves the question, which was suggested to Dr. Keith by his far more successful practice, viz.:—"Does a mortality of 8 per cent. justify an operation for a disease that, as a rule, has only a limited active life, that torments simply, and that only for a time, though of itself it rarely kills? The mortality of an ordinary uterine fibroid, if left alone, is nothing approaching a death-rate of 8 per cent. Most of the cases on which I have operated were known to me for years before; only the extreme cases were done; in nearly all, the lives were useless, and the risk of operation was clearly understood. Considering the nature of the cases, it seems to me that these operations were, perhaps, justifiable; and, if these were barely justifiable, what can be said of those ghastly lists of hysterectomy where the mortality is one death in every two, one death in every three, or even one death in four or five."

Believing, as I do, that abdominal operations unquestionably afford the only possible method of saving life, or relieving otherwise irremediable suffering in some cases of uterine fibro-myomata, I trust that the voice of the profession will make itself heard in no uncertain tone in reprobation of the operative *furore* which has manifested itself in some quarters with regard to the performance of abdominal sections for uterine tumours, and which else may lead to a reaction against the legitimate employment of procedures so valuable in suitable cases. In my student days I was taught that an operation was justified only as a means of saving life or relieving suffering otherwise hopeless. It would now, however, appear that the gravest operations may be resorted to in every case in which the opportunity presents itself, and without any regard to their probable consequences. For my own part, I am unable to accept this doctrine, and am still old-fashioned enough to believe that no operation—especially one of such gravity as that under consideration—should be undertaken save as a matter of necessity, and with a reasonable prospect of a successful result. If the indiscriminate performance of gastrotomy now advocated by some eminent specialists be unfortunately ever generally adopted, then the sooner the better it will be that those suffering from any of the diseases in which abdominal section is thus abused should abandon surgical aid and trust themselves, as formerly, to unassisted Nature's kindlier euthanasia.

We may now briefly consider the circumstances under which abdominal section may be legitimately employed in the treatment

of uterine tumours, and the operations which may by this procedure be resorted to in such cases.

Hysterectomy.—Abdominal hysterectomy, or the abstraction of the uterus by gastrotomy, was first successfully performed for the removal of a uterine tumour, forty years ago, by the late Dr. Clay, of Manchester, and shortly afterwards was again undertaken, in a similar case and with similar result, by Dr. Atlee, of Philadelphia. It was not, however, until long subsequently, when MM. Hardy and Pean, of Paris, in 1873, published their report of nine hysterectomies—seven of which were successful—that this procedure was recognised as a legitimate procedure. In the same year it was first brought before the profession in these countries by Mr. Lawson Tait, who, in a communication to the Medical and Chirurgical Society of London, narrated a case in which he successfully removed a uterine fibroma, weighing eleven pounds. From that time hysterectomy has gradually but surely come into yearly-increasing favour as a means of treating cases of fibromata otherwise beyond remedy. Of late, however, this operation has been extended far beyond this, and by some specialists has been recently pushed to an extent and applied to cases where no absolute necessity apparently existed for resorting to its performance, and which cannot, in my opinion, be justified by any statistical account of its success yet reported.

The removal of the uterus for fibro-myomata may be performed either by abdominal section or per vaginam. The former method being unquestionably the more feasible, and the best adapted in the case of those large fibroid or fibro-cystic growths in the treatment of which the ablation of the uterus may in some instances be necessitated, will alone be here referred to.

Abdominal hysterectomy is usually performed in the manner originally suggested by Dr. Freund, of Breslau, whose directions for its accomplishment, since somewhat modified by Dr. Bantock, Sir Spencer Wells, Mr. Lawson Tait, Dr. Agnew, of Philadelphia, and other recent operators, have been adopted in the cases that have come within my own observation.

Myotomy.—According to Professor Schroeder, any uterine fibro-myomata, however extensive or wherever situated, may be removed abdominally by laparotomy or partial hysterectomy with the aid of the elastic ligature. The appalling mortality resulting from this operation should, however, I think, sufficiently prevent its repetition by other surgeons. Of those on whom Schroeder

thus operated he lost in his first series of cases 30 per cent., and in his second series 22 per cent. of his patients.

Oöphorectomy.—The removal of the uterine appendages, as originally suggested by Blundell, and reintroduced into modern practice by Dr. Batty, of Georgia, whose name as well as that of Dr. Goodell, of Philadelphia, is now identified with this operation, has been largely employed within the past few years for preventing the development of fibromata, and for the prevention of uterine hæmorrhage, consequent on their existence.

If we merely compare the general results of oöphorectomy with those of hysterectomy in the treatment of fibro-myomata as established by the experience of Mr. Knowsly Thornton, Lawson Tait, or Keith, there can be no question of the greater advantages of the former in the case of small uterine tumours. These advantages have been thus urged by Mr. Thornton:—"I believe," he says, "that there is a great future before this operation of removal of the appendages for the cure of fibroid—a future so free from mortality and so satisfactory in its after-results that we shall eventually be justified in performing the operation in a far larger number of cases than we could ever have hoped to justify the more dangerous operations which we have been considering. I feel sure that, with a little more experience, we shall be justified in recommending the removal of the appendages in cases which are troublesome from hæmorrhage, pain, &c., before they grow large enough to raise the question of the more dangerous operations."

Before, however, we can accept oöphorectomy as the panacea that it has been claimed to be for uterine fibromata, it seems to me that further proof is still needed that it is either generally necessary, safe, or feasible in such cases. It would certainly, at least, be desirable to formulate, more distinctly than has been yet done, the cases of fibro-myomata in which oöphorectomy may be resorted to with a fair prospect of benefit, and to point out those in which no reasonable anticipation of success can be held out from its performance. In the first category should be placed generally all obviously actively increasing fibromata not atherwise removable, and more especially those occurring in young patients in whom the prospect of reaching the period when any arrest of the tumour by the natural menopause might be hoped for, is remote, and who, if they survive till then, are meanwhile necessarily condemned to lives of useless suffering. Under these circumstances

there can be no question of the propriety of attempting by oöphorectomy to anticipate the distant menopause in any case in which this is feasible. But the removal of the ovaries as a general rule of practice, as now advocated merely for the arrest of hæmorrhage consequent on fibromata, appears to me unjustifiable until other and safer methods of checking metrorrhagia have been fully and unsuccessfully employed. And I am convinced by my clinical experience that if we try these fairly we shall seldom find it impossible to arrest effectually and safely any uterine hæmorrhage thus caused without oöphorectomy. Secondly, I cannot think this operation generally advisable in the case of quiescent fibroids largely occupying the abdominal cavity in older patients. In such cases the removal of the uterine appendages is generally not merely difficult and hazardous, but even quite impossible in the instances in which, if practicable, it might be most useful. Thus in any large sub-peritoneal or interstitial fibroid lifting the uterus far above the pelvic cavity, and binding it to the adjoining parts by consequent inflammatory intra-peritoneal adhesions, it will be found utterly impossible to reach the ovaries by any abdominal section until the uterus by which they are overlaid and concealed is first detached from these adhesions and turned out of the abdominal cavity. In such a case, and it is no ideal one, having subjected our patient to all the risks of such an operation, are we to dissect out the uterine appendages and then replace the uterus and tumour *in situ*, or in the words of an eminent abdominal sectionist, Dr. Drysdell, of New York, would it not "be better practice to leave the uterine appendages untouched and remove the tumour itself?"

ART. XIX.—*Observations on the Relative Prevalence of Disease and the Relative Death-rates in Town and Country Districts in Ireland.*[a] By THOMAS WRIGLEY GRIMSHAW, M.A., M.D., Univ. Dubl.; Registrar-General for Ireland.

THE prevalence of disease and the high death-rates among town populations, as compared with country populations, have always attracted the attention of sanitarians and vital statisticians, and it is admitted by all that under the conditions in which society at present exists the chances of prolonged life are less among the inhabitants of towns than among country people.

It has been my duty within the past four years to give consider-

[a] Read before the Sub-section of State Medicine of the Academy of Medicine in Ireland, Thursday, April 16, 1885.

able and special attention to the subject of the distribution of disease and deaths in Ireland—firstly, in connexion with the Census of 1881, when extensive statistics regarding the prevalence of disease was collected; and secondly, when compiling a decennial summary of the statistics of the births, marriages, and deaths in Ireland for the inter-census period from 1870 to 1881.[a]

Various statistics relating to this subject have been published in the tables issued by my department, and considered in official reports, including that referred to. As, however, these reports contain many other matters, and are arranged for the purpose of illustrating many points unconnected with that now under discussion, I have thought it desirable to extract and bring together from both sets of reports the principal facts bearing upon the relative health of town and country populations in Ireland, which I believe will prove interesting and instructive.

In the decennial summary of marriages, births, and deaths already referred to, I have prepared a table classifying the population of Ireland into town or "civic" populations and rural populations, and grouped the deaths according to these divisions.

Some little difficulty was experienced in determining what should be classed as civic and what as rural populations. After careful consideration of all the circumstances I determined to consider a populous place with municipal government containing a population of 10,000 or upwards as a town, and to term the district in which that town was situated a "civic" district, and the population of the whole district a town or civic population—the area adopted as comprising the civic population being the poor law union or superintendent registrar's district in which such populous place was situated.

It may be objected that a population of 10,000 or upwards residing in a town situated in the midst of a country district—say the case of Sligo, where the inhabitants of the town number 10,808, and of the union 46,063—is not fairly a town population. This, however, is an extreme case. I think it cannot be denied that a busy town materially affects the whole population for many miles round, not only as to its social and economic conditions, but also as to its health conditions. Thus, if we take a business town with suburbs it is clear that the persons who conduct their business in that town and have their residence in the adjacent country, have their health

[a] Supplement to the Seventeenth Report of the Registrar-General of Marriages, Births, and Deaths in Ireland, containing Decennial Summaries for the Years 1871–1880. Presented to Parliament by command of Her Majesty. Dublin: Alexander Thom & Co., Limited. 1884.

affected both by town and country influences, and therefore must be considered, from a sanitary point of view, as inhabitants of both districts; and as in every case the circumstances of town life appear to be the predominating influence, I have selected a district with a town population of 10,000 or upwards as a fair limit for civic districts.

The result of this classification of the population of Ireland is that the mean civic population in the decade 1871–80 was 1,476,929, and the rural population 3,816,678, making a total mean population for the decade of 5,293,607. The deaths among the civic population were 332,526, or at the annual average rate of 22·5 per 1,000; the deaths in the rural population were 634,219, or at the annual average rate of 16·6 per 1,000, or about 5·9 per 1,000 less. Therefore, in round numbers, the deaths among a million of such a civic population would exceed the deaths among a rural population of the same amount by about 6,000 per annum; or if the rural population of Ireland died at the same rate as the civic, there would be an average increase of about 22,000 deaths per annum.

To illustrate the influence of town populations in the mortality of the areas in which they are situated, I may quote a statement from the decennial summary, where the registration counties of Ireland are arranged in the order of their rates of mortality, from the lowest to the highest, as follows:— [b]

Deaths Registered, 1871–80.

Registration Counties	Death-rate per 1,000	Registration Counties	Death-rate per 1,000
1 Mayo	13·9	17 Kildare	17·7
2 Sligo	14·1	18 Meath	17·8
3 Roscommon	14·3	19 Tipperary	18·1
4 Leitrim	14·4	20 Queen's	18·1
5 Galway	15·2	21 Cork	18·6
6 Donegal	15·2	22 Armagh	18·9
7 Clare	15·6	23 Limerick	19·3
8 Fermanagh	15·7	24 Louth	19·3
9 Longford	15·7	25 Westmeath	19·4
10 Cavan	16·1	26 Down	19·4
11 Tyrone	16·4	27 Wexford	19·7
12 Monaghan	16·5	28 Carlow	20·0
13 Kerry	16·6	29 Kilkenny	20·4
14 Wicklow	17·1	30 Antrim	20·7
15 King's	17·4	31 Waterford	22·0
16 Londonderry	17·7	32 Dublin	26·2

A glance at the list and a comparison between it and Tables I. and II. will show that the counties containing large towns occupy the most unfavourable positions on the list.

[b] Ibid. P. 17.

TABLE I.—*Average Annual Rates per* 10,000 *of the Mean Population* (1871–81) *represented by the Deaths from Several Causes registered during the Ten Years,* 1871–80, *in* (1) *the Unions or Superintendent Registrars' Districts containing Towns which in* 1871 *or in* 1881 *had a population of* 10,000 *or upwards;* (2) *the Group of such Unions in each Registration Province;* (3) *the remaining portion of each Province;* (4) *the total of each Province; with corresponding Rates for all Ireland.*

Poor Law Unions or Superintendent Registrars' Districts	Towns of 10,000 or upwards (in 1871 or in 1881) situated in the respective Unions	Mean Population of Superintendent Registrars' Districts, 1871–81	Average Annual Rate (1871–80) per 10,000 of the Mean Population represented by Deaths from																	
			All Causes	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping-cough	Fever	Erysipelas	Metria, or Puerperal Fever	Childbirth	Influenza	Dysentery	Diarrhœa	Cholera	Principal Zymotic Diseases	Phthisis or Consumption	Diseases of Respiratory Organs	Violence	Other Causes and Unspecified Causes
PROVINCE OF LEINSTER.																				
Drogheda, -	Drogheda, - -	33,178	193·9	1·4	1·8	7·2	1·8	2·5	5·1	·6	·5	·9	·1	·4	3·1	·1	23·4	24·7	25·3	4·3	114·1
Dublin North,	Dublin, Rathmines and Rathgar, and Pembroke,	138,542	279·0	8·1	5·6	10·1	·9	5·5	9·9	1·2	1·8	1·4	·1	·6	7·9	·4	49·0	33·4	52·9	7·0	132·2
Dublin South.		200,888	274·3	10·2	5·0	9·1	1·0	5·4	9·4	1·0	·8	1·1	4	·4	6·7	·2	47·4	30·0	53·3	6·6	133·7
Dundalk, -	Dundalk, - -	44,297	190·5	·7	1·9	4·3	·6	4·2	4·3	·8	·6	1·2	·2	·5	3·9	·2	20·6	15·9	31·6	5 2	114·4
Kilkenny, -	Kilkenny, - -	29,963	204·4	—	2·4	4·3	·4	1·5	6·8	·7	·4	1·3	·1	·4	5·2	·2	21·2	19·1	31·6	3·8	126·2
Rathdown, -	Kingstown, - -	56 305	195·2	2·4	2·7	6·7	1·1	2·7	6·7	·9	·4	·7	·1	·3	3·5	·4	26·5	23·8	32·3	4·4	106·1
Wexford, -	Wexford, - -	39,692	210·1	·9	·9	3·7	·9	4·3	4·2	·7	·4	·7	·0	·4	2 7	·1	18·1	25·9	29·1	4·4	130·8
Total Civic Unions,* - -		542,865	247·0	6·3	4 0	7·9	1·0	4·6	8·0	1·0	1 0	1·1	·2	·4	5·9	·3	38·4	27·8	44·6	5·9	127·0
Rural Unions,† - -		742,870	182·4	·6	1·6	3·5	·8	3·0	5·0	·5	·5	1·1	·2	·4	2·6	·1	17·6	20·4	23·6	3·7	114·8
Total of Province, -		1,285,735	209·7	3·0	2·6	5 4	·9	3·7	6·3	·7	·7	1·1	·2	·4	4·0	·2	26·5	23·6	32·4	4·6	119·9
PROVINCE OF MUNSTER.																				
Clonmel, -	Clonmel, - -	23,621	230·9	·5	1·0	6·3	1·1	4·2	5·3	·5	5	1·0	·0	·5	6·6	·4	25·9	20·3	48·1	4·3	130·3
Cork, - -	Cork and Queenstown	144,293	2 4·8	6·8	4·2	6·6	·6	4·1	7·5	·7	·6	1·0	·0	·5	5·3	·2	35·8	27·4	38·7	6·2	124·2
Limerick, -	Limerick, - -	77,149	208·7	·1	1·7	5·0	·6	3·6	6·3	·4	·5	1·0	·0	·9	6·8	·2	25·2	20·7	33·5	4·6	122·8
Waterford, -	Waterford, - -	56,248	233·9	·2	3·8	6·7	·2	3·2	6·0	·7	·9	·8	·1	·7	6·6	·1	27·5	27·7	31 2	5·6	139·4
Total Civic Unions,* - -		301,316	227·6	3·3	3·2	6·2	·6	3·8	6·7	·6	·8	1·0	·0	·6	6·0	·2	30·6	25·2	36 7	5·5	127·2
Rural Unions,† - -		1,075,321	171·3	·4	2·6	3·4	·4	3·4	6·1	·6	·7	1·1	·2	·7	3·6	·2	20·8	13·6	26·7	3·6	104·0
Total of Province, -		1,376,637	183·6	1·0	2·7	4 0	·4	3·5	6·2	·6	·7	1·1	·2	·7	4·2	·2	22·9	16·1	29·0	4·0	109·0

Province of Ulster.																			
Armagh, - -	Armagh,	68,120	191·2	·2	1·1	2·5	·8	3·3	5·6	·6	·7	·8	·4	·3	3·0	·3	17·1	24·2	31·4	3·8	112·2
Belfast, - -	Belfast, - -	220,962	241·0	3·1	5·3	7·7	·9	7·0	9·1	·8	·8	·8	·1	·4	8·5	·3	42·3	38·2	49·9	5·2	103·1
Lisburn, - -	Lisburn, - -	57,666	200·6	1·3	1·8	6·0	·8	4·0	5·3	·5	·5	1·3	·2	·3	5·1	·1	24·7	29·9	29·7	3·6	110·2
Londonderry, -	Londonderry,	59,184	186·3	2·5	·9	7·4	1·0	4·0	4·9	·7	·4	·9	1	·2	2·4	·1	23·4	24·0	20·1	4·4	112·3
Lurgan, - -	Lurgan, - -	66,449	190·8	·4	1·5	6·1	·7	2·6	5·2	·6	·8	·9	·2	·3	5·4	·1	22·3	23·5	26·9	3·1	112·5
Newry, - -	Newry, - -	69,900	185·8	·6	1·1	3·0	·7	3·0	4·9	·3	·5	·8	·4	·6	2·6	·1	16·6	24·3	25·5	4·3	113·1
Total Civic Unions,* -		542,281	211·3	1·8	2·9	6·0	·8	4·9	6·8	·5	·7	·9	·2	·4	5·7	·2	29·5	30·4	36·2	4·4	108·5
Rural Unions,† - -		1,260,219	166·8	·3	1·0	4·1	·8	2·9	4·3	·5	·6	1·0	·2	·3	2·4	·1	16·2	19·3	21·7	3·3	104·0
Total of Province, -		1,802,500	180·2	·7	1·6	4·8	·8	3·5	5 0	·5	·6	1·0	·2	·3	3·4	·1	20·2	22·7	26·1	3·6	105·3
Province of Connaught.																					
Galway, - -	Galway, - -	43,561	186·9	2·6	·9	1·4	·4	3·4	8·0	·6	·6	1·1	·0	·6	1·9	0	19·2	16·8	19·3	6·1	123·2
Sligo, - -	Sligo, - - -	46,906	152·2	·1	·7	3·4	·4	2·3	4·6	·4	·4	·9	·1	·1	2·8	·0	14·4	19·0	21·2	3·7	92·1
Total Civic Unions,* - -		90,467	168·9	1·3	·8	2·5	·4	2·8	6·2	·5	·5	1·0	·1	·3	2·3	·0	16·6	18·0	20·3	4·8	107·1
Rural Unions,† - -		738,268	141·3	1·0	1·5	2·7	·3	3·2	5·2	·3	·6	1·3	·2	·4	1·6	·0	15·9	11·6	17·2	2·7	91·5
Total of Province, -		828,735	144·3	1·0	1·4	2·6	·3	3·2	5·3	·4	·6	1·3	·2	·4	1·7	·0	15 9	12·3	17·5	3·0	93·1
Ireland.																					
Total Civic Unions,* - -		1,476,929	225·1	3·8	3·2	6·5	·8	4·4	7·2	·7	·8	1·0	·1	·5	5·6	·2	32·2	27·7	38·4	5·2	119·0
Total Rural Unions,† - -		3,816,678	166·2	·5	1·7	3·5	·6	3·1	5·1	·5	·6	1·1	·2	·5	2·6	·1	17·7	16·4	22·6	3·4	103·7
Total, - - - -		5,293,607	182·6	1·4	2·1	4·3	·6	3·5	5·7	·6	·7	1·1	·2	·5	3·4	·1	21·6	19·6	27·0	3 9	107·9

* Unions or Superintendent Registrars' Districts containing Towns which in 1871 or in 1881 had a population of 10,000 or upwards.
† All Unions other than those specified in Note (*).

TABLE II.—*Total Deaths and Deaths from several causes registered during the Ten Years,* 1871–80, *in those Unions or Superintendent Registrars' Districts containing Towns which in* 1871 *or in* 1881 *had a population of* 10,000 *or upwards; with a Summary thereof for each Registration Province, and corresponding details for the remaining portion of each Province.*

Poor Law Unions or Superintendent Registrars' Districts	Towns of 10,000 or upwards (in 1871 or in 1881) situated in the respective Unions	Mean Population of Superintendent Registrars' Districts, 1871–81	Total Deaths	Deaths from several Causes in the Ten Years, 1871–80																	All other Causes and Unspecified Causes
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping-cough	Fever	Erysipelas	Metria or Puerperal Fever	Childbirth	Influenza	Dysentery	Diarrhœa	Cholera	Principal Zymotic Diseases	Phthisis or Consumption	Diseases of Respiratory Organs	Violence	
PROVINCE OF LEINSTER.																					
Drogheda, -	Drogheda, - -	33,178	6,434	45	60	239	60	84	169	20	15	29	3	13	103	4	777	821	841	142	3,786
Dublin North,	Dublin, Rathmines and Rathgar, and Pembroke,	138,542	38,649	1,128	767	1,396	130	764	1,364	160	252	200	8	82	1,094	57	6,782	4,629	7,332	969	18,317
Dublin South.		200,888	55,141	2,043	996	1,826	209	1,807	1,892	212	171	220	82	78	1,347	41	9,519	6,026	10,707	1,329	26,875
Dundalk, -	Dundalk, - -	44,297	8,439	31	84	191	25	185	192	34	29	54	7	23	170	10	911	706	1,401	229	5,068
Kilkenny, -	Kilkenny, - -	29,963	6,134	—	73	129	11	46	203	22	13	39	2	12	157	6	637	574	948	114	3,785
Rathdown, -	Kingstown, - -	56,305	10,932	136	153	375	62	151	378	48	25	39	3	16	195	22	1,488	1,333	1,809	215	5,942
Wexford, -	Wexford, - -	39,692	8,340	38	37	146	38	171	166	28	14	26	1	15	109	3	723	1,028	1,154	173	5,193
Total Civic Unions,* - -		542,865	134,069	3,421	2,170	4,302	535	2,488	4,364	524	519	607	106	239	3,175	143	20,837	15,117	24,192	3,201	68,966
Rural Unions,† - -		742,870	135.528	489	1,173	2,615	562	2,232	3,706	410	402	822	145	276	1,896	72	13,020	15,191	17,532	2,740	85,265
Total of Province, -		1,285,735	269,597	3 910	3,343	6,917	1,097	4,720	8,070	934	921	1,429	251	515	5,071	215	33,858	30,308	41,724	5,941	154,231
PROVINCE OF MUNSTER.																					
Clonmel, -	Clonmel, - -	23,621	5,448	11	24	149	25	100	125	13	11	23	1	12	155	10	611	480	1,134	101	3,074
Cork, - -	Cork and Queenstown	144,293	33,883	973	6 4	959	96	593	1,077	93	129	142	4	69	780	28	5,164	3,955	5,584	894	17,918
Limerick, -	Limerick, - -	77,149	16,103	7	128	384	43	278	487	32	37	79	2	72	522	17	1,938	1,601	2,586	357	9,471
Waterford, -	Waterford, - -	56,248	13,158	10	213	379	12	182	336	38	49	47	3	41	374	6	1,553	1,557	1,753	315	7,843
Total Civic Unions,* - -		301,316	68,592	1,006	969	1,871	176	1,153	2,025	176	226	291	10	194	1,811	61	9,266	7,593	11,057	1,667	38,306
Rural Unions,† - -		1,075,321	184,150	449	2,793	3,642	414	3,664	6,512	597	787	1,219	199	734	3,925	224	22,357	14,555	28,668	3,887	111,881
Total of Province, -		1,376,637	252,742	1,455	3,762	5,513	590	4,817	8,537	773	1,013	1,510	209	928	5,736	285	31,623	22,148	39,725	5,554	150,187

PROVINCE OF ULSTER.																				
Armagh, - -	Armagh, - -	68,120	13,001	13	77	172	54	227	378	39	45	58	27	20	207	23	1,171	1,644	2,132	252	7,663
Belfast, - -	Belfast, - -	220,962	53,234	694	1,161	1,700	198	1,557	2,014	140	172	179	14	90	1,884	76	9,374	8,444	11,028	1,143	22,790
Lisburn, - -	Lisburn, - -	57,666	11,633	76	103	393	41	232	309	30	29	75	10	20	296	6	1,476	1,737	1,724	209	6,343
Londonderry, -	Londonderry, -	59,184	10,991	149	51	437	63	236	290	39	29	52	8	12	141	6	1,385	1,413	1,183	259	6,623
Lurgan, - -	Lurgan, - -	66,449	12,687	28	98	407	44	185	348	37	51	57	12	18	359	7	1,494	1,562	1,786	208	7,480
Newry, - -	Newry, - -	69,900	12,987	40	77	206	50	209	343	22	34	55	25	38	179	7	1,149	1,702	1,783	299	7,918
Total Civic Unions,* - -		542,281	114,583	1,000	1,567	3,315	450	2,646	3,682	307	360	476	96	198	3,066	125	16,049	16,502	19,636	2,370	58,787
Rural Unions,† - -		1,260,219	210,241	355	1,284	5,127	1,042	3,610	5,431	627	728	1,270	281	412	2,993	71	20,325	24,374	27,385	4,206	131,045
Total of Province, -		1,802,500	324,824	1,355	2,851	8,442	1,492	6,256	9,113	934	1,088	1,746	377	610	6,059	196	36,374	40,876	47,021	6,576	189,832
PROVINCE OF CONNAUGHT.																				
Galway, - -	Galway, - -	43,561	8,143	114	40	62	16	149	347	26	24	48	1	26	81	1	836	731	843	267	5,367
Sligo, - -	Sligo, - -	46,906	7,139	3	31	161	19	105	214	18	20	43	5	5	128	2	663	897	996	173	4,319
Total Civic Unions,* - -		90,467	15,282	117	71	223	35	254	561	44	44	91	6	31	209	3	1,504	1,628	1,839	440	9,686
Rural Unions,† - -		738,268	104,300	713	1,091	1,982	189	2,387	3,811	255	478	980	129	303	1,178	34	11,688	8,568	12,682	2,027	67,493
Total of Province, -		828,735	119,582	830	1,162	2,205	224	2,641	4,372	299	522	1,071	135	334	1,387	37	13,192	10,196	14,521	2,467	77,179
IRELAND.																				
Total Civic Unions,* - -		1,476,929	332,526	5,544	4,777	9,711	1,196	6,541	10,632	1,051	1,149	1,465	218	662	8,261	332	47,656	40,840	56,724	7,678	175,745
Total Rural Unions,† - -		3,816,678	634,219	2,006	6,341	13,366	2,207	11,893	19,460	1,889	2,395	4,291	754	1,725	9,992	401	67,391	62,688	86,267	12,860	395,684
Total, - - - -		5,293,607	966,745	7,550	11,118	23,077	3,403	18,434	30,092	2,940	3,544	5,756	972	2,387	18,253	733	115,047	103,528	142,991	20,538	571,429

* Unions or Superintendent Registrars' Districts containing Towns which in 1871 or in 1881 had a population of 10,000 or upwards

† All Unions other than those specified in Note (*).

TABLE III.—*Showing the Rate per* 1,000 *of the Population of Persons* (1) *those Unions or Superintendent Registrars' Districts containing Unions in each Registration Province;* (3) *the remaining portion of for all Ireland.*

Poor Law Unions or Superintendent Registrars' Districts	Towns of 10,000 or upwards (in 1871 or in 1881), situated in the respective Unions	Area in Statute Acres	Population in 1881	Number per 1,000 of Population Temporarily Diseased				Zymotic				
				At their own Homes	In Infirmaries and General and Special Hospitals	In Workhouse Hospitals	Total	Smallpox	Measles	Scarlatina	Diphtheria	Whooping-cough
PROVINCE OF LEINSTER.												
Drogheda, -	Drogheda, - -	99,062	31,630	3·51	—	2·50	6·01	·03	—	·19	—	—
Dublin North, } Dublin South, }	Dublin, Rathmines and Rathgar, and Pembroke.	41,256 / 48,200	142,981 / 202,264	1·35 / 2·02	4·64 / 4·94	11·40 / 8·67	17·39 / 15·63	— / ·02	·03 / ·03	·06 / ·16	·01 / ·00	— / ·00
Dundalk, -	Dundalk, - -	104,629	43,193	3·15	·88	·44	4·47	—	—	—	—	—
Kilkenny, -	Kilkenny, - -	110,943	28,733	3·83	1·53	4·80	10·16	—	·07	·07	—	—
Rathdown, -	Kingstown, - -	61,513	57,913	2·59	1·81	7·05	11·45	·14	—	·05	—	·03
Wexford, -	Wexford, - -	126,301	38,745	4·21	·67	3·61	8·49	—	—	·08	—	—
Total Civic Unions,* - -		591,904	545,459	2·33	3·44	7·64	13·41	·02	·02	·10	·00	·01
Rural Unions,† - -		4,114,598	710,562	3·77	·57	3·13	7·47	·01	·08	·07	—	·02
Total of Province, -		4,706,502	1,256,021	3·15	1·81	5·09	10·05	·02	·06	·08	·00	01
PROVINCE OF MUNSTER.												
Clonmel, -	Clonmel, - -	87,707	23,009	4·35	·39	5·30	10·04	—	—	·39	—	·04
Cork, - -	Cork and Queenstown.	169,732	145,216	3·12	3·13	7·92	14·17	·01	·09	·08	—	·06
Limerick, -	Limerick, - -	177,956	75,051	2·29	1·20	7 90	11·39	—	—	·05	—	—
Waterford, -	Waterford, - -	125,720	55,189	4·44	·96	5·24	10·64	—	·05	·15	—	—
Total Civic Unions,* - -		561,115	293,465	3·25	2·03	7·22	12·50	·00	·05	·11	—	·03
Rural Unions.† - -		5,444,559	1,046,544	3·14	·28	3·84	7·26	·00	·06	·08	·00	05
Total of Province, -		6,005,674	1,345,009	3·16	·67	4·59	8·42	00	·06	·09	·00	·05

* Unions or Superintendent Registrars' Districts containing

† All Unions other than those specified in Note (*).

who laboured under Temporary Diseases on the 3rd of April, 1881, in Towns with a Population of 10,000 or upwards; (2) the Group of such each Province; (4) the total of each Province; with corresponding Rates

Nature of Illness and Rate per 1,000																			
Diseases						Constitutional Diseases		Local Diseases of							Developmental Diseases			Injuries	Unspecified or Ill-defined
Fever	Diarrhœa, Dysentery	Cholera	Principal Zymotic Diseases	Rheumatism	Other Zymotics	Consumption	Others	Nervous System	Circulatory Organs	Respiratory Organs	Digestive Organs	Urinary Organs	Generative Organs	Organs of Locomotion	Integumentary System	Childbirth	Debility, Old Age	Others		
·13	·06	—	·41	·48	·09	·63	·26	·38	·22	1·43	·13	·09	—	·09	·16	·06	·82	—	·28	·48
·41	·06	—	·57	1·33	·92	·64	·38	1·32	·38	2·15	·40	·18	·20	·39	1·13	·24	5·80	—	·66	·70
·48	·04	—	·73	1·03	1·04	·50	·69	1·59	·28	1·60	·29	·17	·22	·54	·78	·16	4·57	·01	·62	·81
·07	·05	—	·12	·44	·30	·49	·28	·51	·09	·69	·19	·07	—	·02	·30	—	·46	·02	·37	·12
·38	—	—	·52	·42	·14	·42	·59	·77	·31	2·05	·31	·07	—	·28	·21	·03	2·86	—	·66	·52
·38	—	—	·60	1·07	·22	·52	·54	1·00	·22	1·26	·35	·07	·05	·36	·21	·07	2 63	—	·59	1·69
·13	·05	—	·26	·75	·08	·59	·36	1·29	·21	1·65	·44	·03	—	·08	·44	·15	1·26	—	·49	·41
·36	·04	—	55	·98	·69	·55	·50	1·24	·28	1·66	·32	·14	·14	·37	·68	·15	3·82	·01	·58	·75
·24	·05	—	·47	·78	·23	·52	·38	·72	·15	1·33	·31	·08	·04	11	·40	·08	1·17	·01	·41	·28
·30	·05	—	·52	·87	·43	·53	·43	·94	·21	1·47	·32	·10	·08	·22	·52	·11	2·32	·01	·48	·49
·13	—	—	·56	1·35	·22	·70	·17	1·52	·39	1·52	·13	–	—	·09	·43	—	1·65	—	·35	·96
·81	·12	·01	1·18	·85	·49	·80	·76	1·37	·25	2·47	·22	·19	·15	·24	1·34	·08	2·21	·06	73	·78
·27	·33	—	·65	·84	1·03	·91	·53	1·45	·32	1·80	·25	·08	—	·09	1·16	·08	1·01	—	·60	·59
·56	·20	—	·96	·82	·09	·80	·71	1·16	·27	2·26	·20	·11	·02	·05	1·01	·02	1·16	—	·60	·40
·57	·18	·00	·94	·88	·53	·82	·65	1·37	·28	2·19	·22	·13	·08	·16	1·17	·06	1·67	·03	·64	·68
·36	·13	·00	·68	·55	·17	·40	·33	·81	·18	1·39	·25	·06	·03	·10	·39	·05	1·08	·02	·38	·39
·41	·14	·00	·75	·62	25	49	·40	·93	·20	1·57	·24	·07	·04	·11	·56	·06	1·21	·03	·44	·45

Towns which in 1871 or in 1881 had a population of 10,000 or upwards.

TABLE III.—

Poor Law Unions or Superintendent Registrars' Districts	Towns of 10,000 or upwards (in 1871 or in 1881), situated in the respective Unions	Area in Statute Acres	Population in 1881	Number per 1,000 of Population Temporarily Diseased				Zymotic				
				At their own Homes	In Infirmaries and General and Special Hospitals	In Workhouse Hospitals	Total	Smallpox	Measles	Scarlatina	Diphtheria	Whooping-cough
PROVINCE OF ULSTER.												
Armagh, -	Armagh, - -	154,247	63,855	4·12	·75	1·28	6·15	·05	—	—	—	·17
Belfast, - -	Belfast, - -	48,372	239,283	3·29	1·25	4·70	9·24	·03	·02	·01	—	·12
Lisburn, - -	Lisburn, - -	119,871	55,618	3·96	·77	2·03	6·76	—	·13	—	—	·07
Londonderry, -	Londonderry, -	144,127	59,611	2·47	1·32	·91	4·70	—	—	—	—	—
Lurgan, - -	Lurgan, - -	79,943	62,982	3·48	—	3·11	6·59	—	·02	·02	—	·10
Newry, - -	Newry, - -	137,974	67,722	3·07	·42	·81	4·30	—	·05	·04	—	—
Total Civic Unions,* - -		684,534	549,071	3·36	·90	2·96	7·22	·02	·03	·01	—	·09
Rural Unions,† - -		4,720,302	1,208,061	4·01	·23	1·53	5·77	·00	·01	·04	·00	·04
Total of Province, -		5,404,836	1,757,132	3·81	·43	1·98	6·22	·01	·01	·03	·00	·06
PROVINCE OF CONNAUGHT.												
Galway, - -	Galway, - -	197,467	43,101	2·62	1·07	2·48	6·17	—	—	—	—	—
Sligo. - -	Sligo, - - -	143,523	46,063	2·74	1·30	2·32	6·36	—	—	·02	—	—
Total Civic Unions,* - -		340,990	89,164	2·68	1·19	2·40	6·27	—	—	·01	—	—
Rural Unions,† - -		3,868,207	727,510	3·67	·17	2·55	6·39	·00	·06	·05	·00	·02
Total of Province, -		4,209,197	816,674	3.56	·28	2·53	6·37	·00	·05	·05	·00	·01
IRELAND.												
Total Civic Unions,* - -		2,178,543	1,482,159	2·92	2·08	5·51	10·51	·02	·03	·07	·00	.04
Rural Unions,† - -		18,147,666	3,692,677	3 65	·29	2·70	6·64	·00	·05	·06	·00	·04
Total, - -		20,326,209	5,174,836	3·44	·81	3·50	7·75	·01	·04	·06	·00	·04

* Unions or Superintendent Registrars' Districts containing

† All Unions other than those specified in Note (*).

continued.

Nature of Illness and Rate per 1,000																			
Diseases						Constitutional Diseases		Local Diseases of								Developmental Diseases			Injuries	Unspecified or Ill-defined
Fever	Diarrhœa, Dysentery	Cholera	Principal Zymotic Diseases	Rheumatism	Other Zymotics	Consumption	Others	Nervous System	Circulatory Organs	Respiratory Organs	Digestive Organs	Urinary Organs	Generative Organs	Organs of Locomotion	Integumentary System	Childbirth	Debility, Old Age	Others		
·11	—	—	·33	·61	·16	·61	48	·61	·09	1·08	·19	·09	·02	·12	·31	·05	·77	·02	·39	·22
·09	·03	—	·30	·66	·25	·71	·33	·71	·14	1·78	·39	.11	·07	·19	1·01	·07	1·37	·01	·53	·63
·15	·09	—	·44	·41	·22	·47	·34	·86	·20	1·35	·32	·20	—	·13	·65	·02	·43	—	·49	·23
·37	·02	—	·39	·49	·42	·57	·40	·35	·07	·55	·17	·15	·07	·13	·15	·02	·37	·05	·37	·08
·06	·14	—	·34	·63	·11	·78	·35	·54	·14	1·03	·37	·11	—	·02	·41	·08	·95	·03	·35	·35
·07	·01	—	·17	·56	·21	·50	·22	·31	·09	·74	·13	·06	—	·07	·34	—	·39	—	·39	·12
·12	·04	—	·31	·60	·22	·64	·35	·00	·13	1·31	·30	·12	·04	·12	·65	·05	·93	·01	·45	·39
·20	·04	—	·33	·59	·09	·50	·39	·57	·14	·92	·28	·09	·01	·10	28	·04	·74	·01	·44	·25
·18	·04	—	·33	·59	·13	·55	·38	·58	·13	1·04	·29	·10	·02	·11	·39	·04	·80	·01	·44	·29
·51	·02	—	·53	·37	·09	·37	·28	·93	·12	1·23	·12	·09	·05	·16	·44	·02	·49	—	·56	·32
·22	·07	—	·31	43	·07	·44	·30	·70	·04	1·13	·39	·15	·04	·15	·41	·09	·78	·02	·54	·37
·36	·04	—	·41	·40	·08	·40	·29	·81	·08	1·18	·26	·12	·04	·16	·43	·06	·64	·01	·55	·35
·33	·07	—	·53	·68	·08	·41	·30	·66	12	1·16	·26	·05	·01	·11	·37	·05	·87	·02	·43	·28
·33	·07	—	·51	·65	·08	·41	30	·68	·12	1·17	·26	·06	·01	·11	·37	·05	·84	·02	·45	·28
·32	·07	·00	·55	·79	·45	63	·46	1·00	·21	1·61	·29	·13	·08	·22	·75	·09	2·12	·01	·54	·18
·28	·07	·00	·50	·63	·14	·46	·35	·68	·15	1·18	·27	·07	·02	·10	·35	·06	·94	·02	·42	·30
·29	·07	·00	·51	·67	·23	·51	·38	·79	·16	1·30	·28	·09	·04	·14	·46	·06	1·28	·02	·45	·38

Towns which in 1871 or in 1881 had a population of 10,000 or upwards.

TABLE IV.—*Showing the Number and Diseases of Persons who laboured under*
Superintendent Registrars' Districts containing Towns with a Population of
(3) the remaining portion of each Province; (4) the total of each Province;

Poor Law Unions or Superintendent Registrars' Districts	Towns of 10,000 or upwards (in 1871 or in 1881), situated in the respective Unions	Area in Statute Acres	Population in 1881	Number of Temporarily Diseased to every 1,000 of the Population	Number of Temporarily Diseased				Zymot					
					At their own Homes	In Infirmaries and General and Special Hospitals	In Workhouse Hospitals	Total	Smallpox	Measles	Scarlatina	Diphtheria	Whooping-cough	Fever
PROVINCE OF LEINSTER.														
Drogheda, -	Drogheda, - -	99,062	31,630	6·0	111	—	79	190	1	—	6	—	—	4
Dublin North, } Dublin South, }	Dublin, Rathmines and Rathgar, and Pembroke.	41,256	142,981	17·4	194	663	1,630	2,487	—	4	9	1	—	58
		48,200	202,264	15 6	408	999	1,754	3,161	4	6	32	1	1	96
Dundalk, -	Dundalk, - -	104,629	43,193	4·5	136	38	19	193	—	—	—	—	—	3
Kilkenny, -	Kilkenny, - -	110,943	28,733	10·2	110	44	138	292	—	2	2	—	—	11
Rathdown, -	Kingstown, - -	61,513	57,913	11·4	150	105	408	663	8	—	3	—	2	22
Wexford, -	Wexford, - -	126,301	38,745	8·5	163	26	140	329	—	—	3	—	—	5
Total Civic Unions,* - -		591,904	545,459	13·4	1,272	1,875	4,168	7,315	13	12	55	2	3	199
Rural Unions,† - -		4,114,598	710,562	7·5	2,680	406	2,224	5,310	10	60	48	—	14	172
Total of Province, -		4,706,502	1,256,021	10·1	3,952	2,281	6,392	12,625	23	72	103	2	17	371
PROVINCE OF MUNSTER.														
Clonmel, -	Clonmel, - -	87,707	23,009	10·0	100	9	122	231	—	—	9	—	1	3
Cork, - -	Cork and Queenstown.	169,732	145,216	14·2	453	454	1,150	2,057	1	13	12	—	9	117
Limerick, -	Limerick, - -	177,956	75,051	11·4	172	90	593	855	—	—	4	—	—	20
Waterford, -	Waterford, - -	125,720	55,189	10·7	245	53	289	587	—	3	8	—	—	31
Total Civic Unions,* - -		561,115	298,465	12·5	970	606	2,154	3,730	1	16	33	—	10	171
Rural Unions,† - -		5,444,559	1,046,544	7·3	3,282	288	4,023	7,593	1	61	89	2	58	378
Total of Province, -		6,005,674	1,345,009	8·4	4,252	894	6,177	11,323	2	77	122	2	68	549

* Unions or Superintendent Registrars' Districts containing Towns

† All Unions other than those specified in Note (*).

Temporary Diseases on the Night of 3rd of April, 1881, *in* (1) *those Unions or* 10,000 *or upwards*; (2) *the Group of such Unions in each Registration Province*; *with corresponding Rates for all Ireland.*

Nature of Illness and Number of Cases																		
Diseases					Constitutional Diseases		Local Diseases of							Developmental Diseases			Injuries	Unspecified or Ill-defined
Diarrhœa, Dysentery	Cholera	Principal Zymotic Diseases	Rheumatism	Other Zymotics	Consumption	Others	Nervous System	Circulatory Organs	Respiratory Organs	Digestive Organs	Urinary Organs	Generative Organs	Organs of Locomotion	Integumentary System	Childbirth	Debility, Old Age	Others		
2	—	13	15	3	20	8	12	7	45	4	3	—	3	5	2	26	—	9	15
8	—	80	190	132	91	54	189	54	308	58	26	28	56	162	35	830	—	94	100
8	—	148	209	211	100	139	321	56	324	59	35	45	109	157	32	924	3	126	163
2	—	5	19	13	21	12	22	4	30	8	3	—	1	13	—	20	1	16	5
—	—	15	12	4	12	17	22	9	59	9	2	—	8	6	1	82	—	19	15
—	—	35	62	13	30	31	58	13	73	20	4	3	21	12	4	152	—	34	98
2	—	10	29	3	23	14	50	8	64	17	1	—	3	17	6	49	—	19	16
22	—	306	536	379	297	275	674	151	903	175	74	76	201	372	80	2,083	4	317	412
39	—	343	557	167	372	268	509	107	943	221	54	25	76	285	58	830	5	292	198
61	—	649	1,093	546	669	543	1,183	258	1,846	396	128	101	277	657	138	2,913	9	609	810
—	—	13	31	5	16	4	35	9	35	3	—	—	2	10	—	38	—	8	22
18	1	171	124	71	116	110	199	36	359	32	27	21	35	195	12	321	9	106	113
25	—	49	63	77	68	40	109	24	135	19	6	—	7	87	6	76	—	45	44
11	—	53	45	5	44	39	64	15	125	11	6	1	3	56	1	64	—	31	22
54	1	286	263	158	244	193	407	84	654	65	39	22	47	348	19	499	9	192	201
132	1	722	574	180	414	345	844	184	1,460	258	63	27	101	404	57	1,131	26	398	405
186	2	1,008	837	338	658	538	1,251	268	2,114	323	102	49	148	752	76	1,630	35	590	606

which in 1871 or in 1881 had a population of 10,000 or upwards.

Table IV.—

Poor Law Unions or Superintendent Registrars' Districts	Towns of 10,000 or upwards (in 1871 or in 1881), situated in the respective Unions	Area in Statute Acres	Population in 1881	Number of Temporarily Diseased to every 1,000 of the Population	Number of Temporarily Diseased				Zymot					
					At their own Homes	In Infirmaries and General and Special Hospitals	In Workhouse Hospitals	Total	Smallpox	Measles	Scarlatina	Diphtheria	Whooping-cough	Fever
Province of Ulster.														
Armagh, - -	Armagh, - -	154,247	63,855	6·2	263	48	82	393	3	—	—	—	11	7
Belfast, - -	Belfast, - -	48,372	239,283	9·2	788	299	1,125	2,212	7	4	3	—	29	22
Lisburn, - -	Lisburn, - -	119,871	55,618	6·8	220	43	113	376	—	7	—	—	4	8
Londonderry, -	Londonderry, -	144,127	59,611	4·7	147	79	54	280	—	—	—	—	—	22
Lurgan, - -	Lurgan, - -	79,943	62,982	6·6	219	—	196	415	—	1	1	—	6	4
Newry, - -	Newry, - -	137,974	67,722	4·3	208	28	55	291	—	3	3	—	—	5
Total Civic Unions,* - -		684,534	549,071	7·2	1,845	497	1,625	3,967	10	15	7	—	50	68
Rural Unions,† - -		4,720,302	1,208,061	5·8	4,849	271	1,849	6,969	1	8	45	1	50	243
Total of Province, -		5,404,836	1,757,132	6·2	6,694	768	3,474	10,926	11	23	52	1	00	311
Province of Connaught.														
Galway, - -	Galway, - -	197,467	43,101	6·2	113	46	107	266	—	—	—	—	—	22
Sligo. - -	Sligo, - -	143,523	46,063	6·4	126	60	107	293	—	—	1	—	—	10
Total Civic Unions,* - -		340,990	89,164	6·3	239	106	214	559	—	—	1	—	—	32
Rural Unions,† - -		3,868,207	727,510	6·4	2,668	121	1,858	4,647	3	41	39	2	12	238
Total of Province, -		4,209,197	816,674	6·4	2,907	227	2,072	5,206	3	41	40	2	12	270
IRELAND.														
Total Civic Unions,* - -		2,178,543	1,482,159	10·5	4,326	3,084	8,161	15,571	24	43	96	2	63	470
Rural Unions,† - -		18,147,666	3,692,677	6·6	13,479	1,086	9,954	24,519	15	170	221	5	134	1,031
Total, -		20,326,209	5,174,836	7·7	17,805	4,170	18,115	40,090	39	213	317	7	197	1,501

* Unions or Superintendent Registrars' Districts containing Towns

† All Unions other than those specified in Note (*).

continued.

Nature of Illness and Number of Cases																		
Diseases					Constitutional Diseases		Local Diseases of								Developmental Diseases			Injuries	Unspecified or Ill-defined
Diarrhœa, Dysentery	Cholera	Principal Zymotic Diseases	Rheumatism	Other Zymotics	Consumption	Others	Nervous System	Circulatory Organs	Respiratory Organs	Digestive Organs	Urinary Organs	Generative Organs	Organs of Locomotion	Integumentary System	Childbirth	Debility, Old Age	Others		
—	—	21	39	10	39	31	39	6	69	12	6	1	8	20	3	49	1	25	14
8	—	73	158	55	169	79	170	35	427	93	27	17	45	242	17	327	2	126	150
5	—	24	23	12	27	19	48	11	75	18	11	—	7	36	1	24	—	27	13
1	—	23	29	25	34	24	21	4	33	10	9	4	2	9	1	22	3	22	5
9	—	21	40	7	49	22	34	9	65	23	7	--	1	26	5	60	2	22	22
1	—	12	38	14	34	15	21	6	50	9	4	—	5	23	—	26	—	26	8
24	—	174	327	123	352	190	333	71	719	165	64	22	68	356	27	508	8	248	212
51	—	399	712	113	607	475	691	162	1,112	342	105	13	124	334	50	892	14	529	295
75	—	573	1,039	236	959	665	1,024	233	1,831	507	169	35	192	690	77	1,400	22	777	507
1	—	23	16	4	16	12	40	5	53	5	4	2	7	19	1	21	—	24	14
3	—	14	20	3	20	14	32	2	52	18	7	2	7	19	4	36	1	25	17
4	—	37	36	7	36	26	72	7	105	23	11	4	14	38	5	57	1	49	31
51	–	386	495	60	302	216	479	87	848	188	37	4	77	268	39	632	14	314	201
55	—	423	531	67	338	242	551	94	953	211	48	8	91	306	44	689	15	363	232
104	1	803	1,162	667	929	684	1,486	313	2,381	428	188	124	330	1 114	131	3,147	22	806	856
273	1	1,850	2,338	520	1,695	1,304	2,523	540	4,363	1,009	259	69	378	1,291	204	3,485	59	1,533	1,099
377	2	2,653	3,500	1,187	2,624	1,988	4,009	853	6,744	1,437	447	193	708	2,405	335	6,632	81	2,339	1,955

which in 1871 or in 1881 had a population of 10,000 or upwards.

Now, turning from deaths to statistics of disease as furnished by the Census returns of 1881 (Tables III. and IV.) we find that, exclusive of lunatics, blind, deaf and dumb, there were returned as sick on Census night 40,090 persons, or at the rate of 7·75 per 1,000 of the population of Ireland. Of these 40,090 persons, 15,571, or at the rate of 10·51 per 1,000 of the population, were in civic districts; and 24,519, or at the rate of 6·64 per 1,000 in the rural districts.

The death statistics are much more exact than the statistics of disease. It will be observed that the ratios between the town and country death-rate and the town and country disease-rate are very close to one another, being in the former at the rate of 1·5 to 1 and in the latter 1·4 to 1. This point is of very great interest and of considerable importance, as it shows that, when dealing with the statistics of large communities, the Census statistics of sickness may be taken as a fair general measure of the comparative health of sections of the population.

If we extract the figures from the tables (I. to IV.) which I have already alluded to, and construct curves to illustrate the comparison, we have the accompanying diagram (Diagram I.), which shows that the relations pointed out as existing between the average death-rate for Ireland during the decade and the disease-rate on the Census night are tolerably constant. There are some exceptions both absolutely and relatively to this rule, but these exceptions arise chiefly among the smaller numbers, and in the case of the larger populations the curves are nearly parallel.

I have here introduced this reference to death-rate and sickness-rate with a twofold object—first, to point to the importance of a registration of disease; secondly, to substantiate by the only available record of the prevalence of disease the value of the death-rate as a measure of the health of communities. I have elsewhere indicated the precautions which I consider essential in measuring the health of communities by their death-rates, and it is not necessary to again repeat these cautions here.[a]

It is scarcely necessary again to point out that the death-rates in towns are higher than the death-rate in country districts.

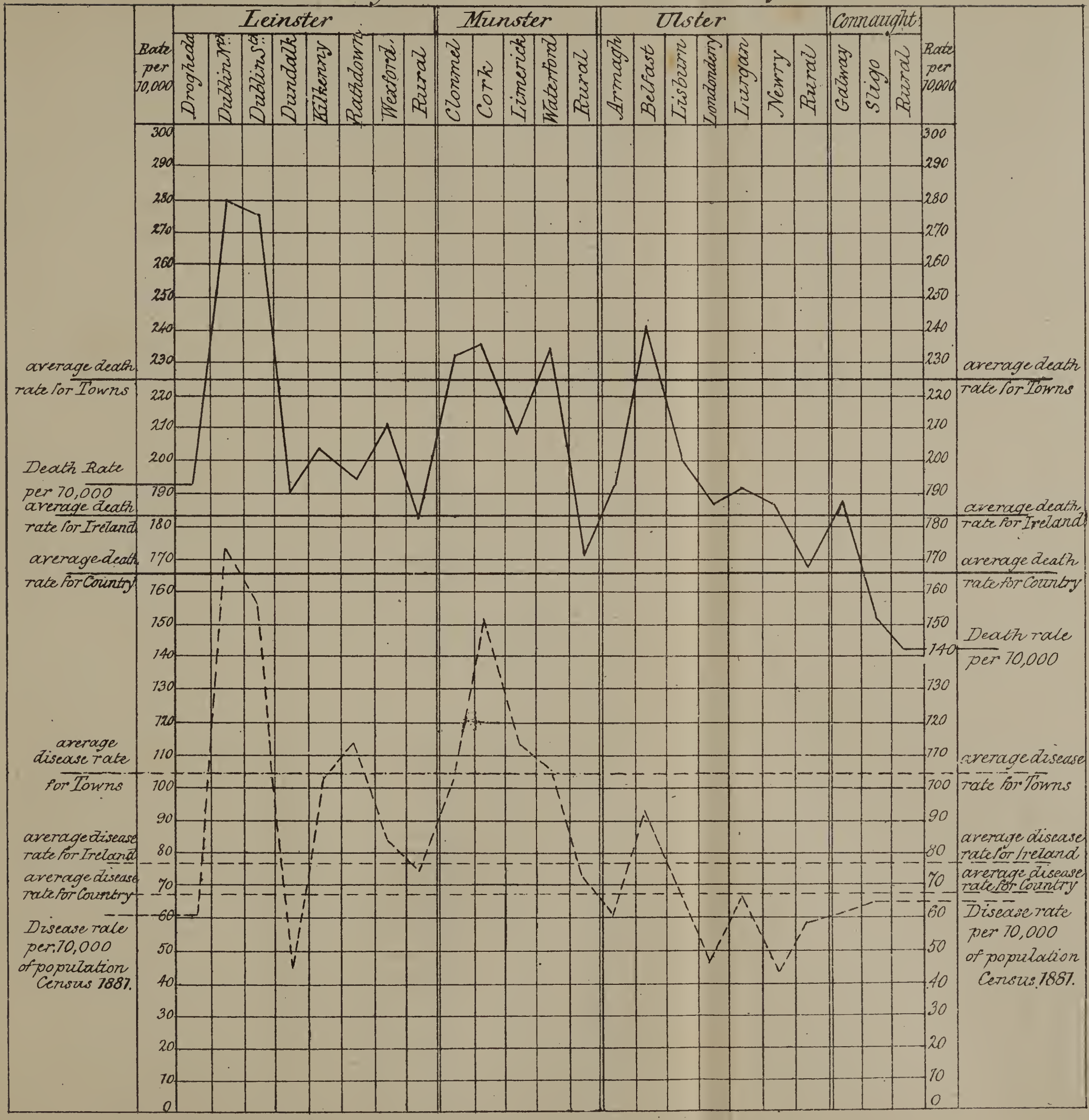
There are many difficulties in assigning causes why the expectation of life should be less in town than in country.

There are many reasons why town populations should be more

[a] Address to Section I. of the Sanitary Congress in Dublin in 1884, entitled, "Statistical Measures of the Health of Communities."

DIAGRAM I

Showing Comparison between average death rate for 10 years 1871-80 and disease rate according to Census of 1881 in Ireland in Town & in Country Districts.



Death Rates 1871-80 —— Disease Rate Census 1881 - - - -

healthy, instead of less healthy, than country populations. They should be better housed, better supplied with water, should have more light at night, have better sanitary appliances, better cleansing arrangements, and have, as a matter of fact, better provision for the sick of all classes—good hospitals for the poor, and the best medical advice for the rich. On the other hand, they have the disadvantages of being closely packed together, the air is less pure, they are engaged in unhealthy occupations, and liable to habits and temptations which promote disease. Looking at such a statement as the foregoing, it would almost appear that the advantages of town life should outweigh the disadvantages. Unfortunately, the advantages are seldom developed to anything like a reasonable extent, and the disadvantages are, in too many instances, intensified as far as they possibly may be.

Now, we naturally expect that some diseases will prevail and cause deaths to a greater extent in town than in country districts. Thus, where people are close together, infective diseases will spread with greater facility than where people are widely separated, and, therefore, diseases of the infective type are found to be more prevalent in town than in country populations. But why should this be also true of other forms of disease?

In the accompanying table of causes of death from particular diseases and certain well-marked groups of diseases, it will be observed that, with the exception of childbirth, all the principal causes of death are more intense in town than in country districts in Ireland. The accompanying diagram demonstrates this in a very distinct manner (see Diagram II.).

Looking at Tables I. and II., and Diagram II., it will be observed there are three principal groups of causes of death—namely, the principal zymotics; phthisis or pulmonary consumption; and diseases of the respiratory organs. Leaving other causes out of consideration we have the following general statement:—

	Total Deaths		Principal Zymotics		Phthisis		Diseases of Respiratory Organs	
	No.	Rate per 1,000	No.	Rate per 1,000	No.	Rate per 1,000	No.	Rate per 1,000
Civic Districts	332,526	22·5	47,656	3·2	40,840	2·8	56,724	3·8
Rural Districts	634,219	16·6	67,391	1·8	62,688	1·6	86,267	2·3
Total Ireland	966,745	18·3	115,047	2·2	103,528	2·0	142,991	2·7

It will be observed that these three groups comprise more than one-third of the mortality from all causes in Ireland, and that in each group the death-rate in towns far exceeds that of the average for Ireland, and of course still further that of the country districts. A further analysis shows that in the case of the principal zymotics the death-rate in towns exceeds that of the average of Ireland from the same causes by 10·6 per 10,000; in the case of phthisis, by 8·1; and in cases of diseases of the respiratory organs, 11·4. The excess of mortality similarly taken in civic as compared with rural populations is—principal zymotics, 14·5; phthisis, 11·3; and diseases of the respiratory organs, 15·8. It is evident from the foregoing statement that the greatest waste of life which takes place in town as compared with country populations in Ireland is caused by diseases of the respiratory organs and phthisis, not by the principal zymotic diseases of an infective nature. In dealing with this question it is difficult to treat of phthisis and diseases of the respiratory organs separately, as they are, in fact, often combined in causing death, and many cases of phthisis originate in some other form of lung disease. If we take these two groups in combination we find that during the decade 1871–80 they caused 246,519 deaths, or more than one-fourth of all the deaths in Ireland.

From Table I. the following statement may be extracted:—

	Death-rate per 10,000 Inhabitants		
	Phthisis	Diseases of Respiratory Organs	From both combined
Civic Districts - -	27·7	38·4	66·1
Rural Districts - -	16·4	22·6	39·0

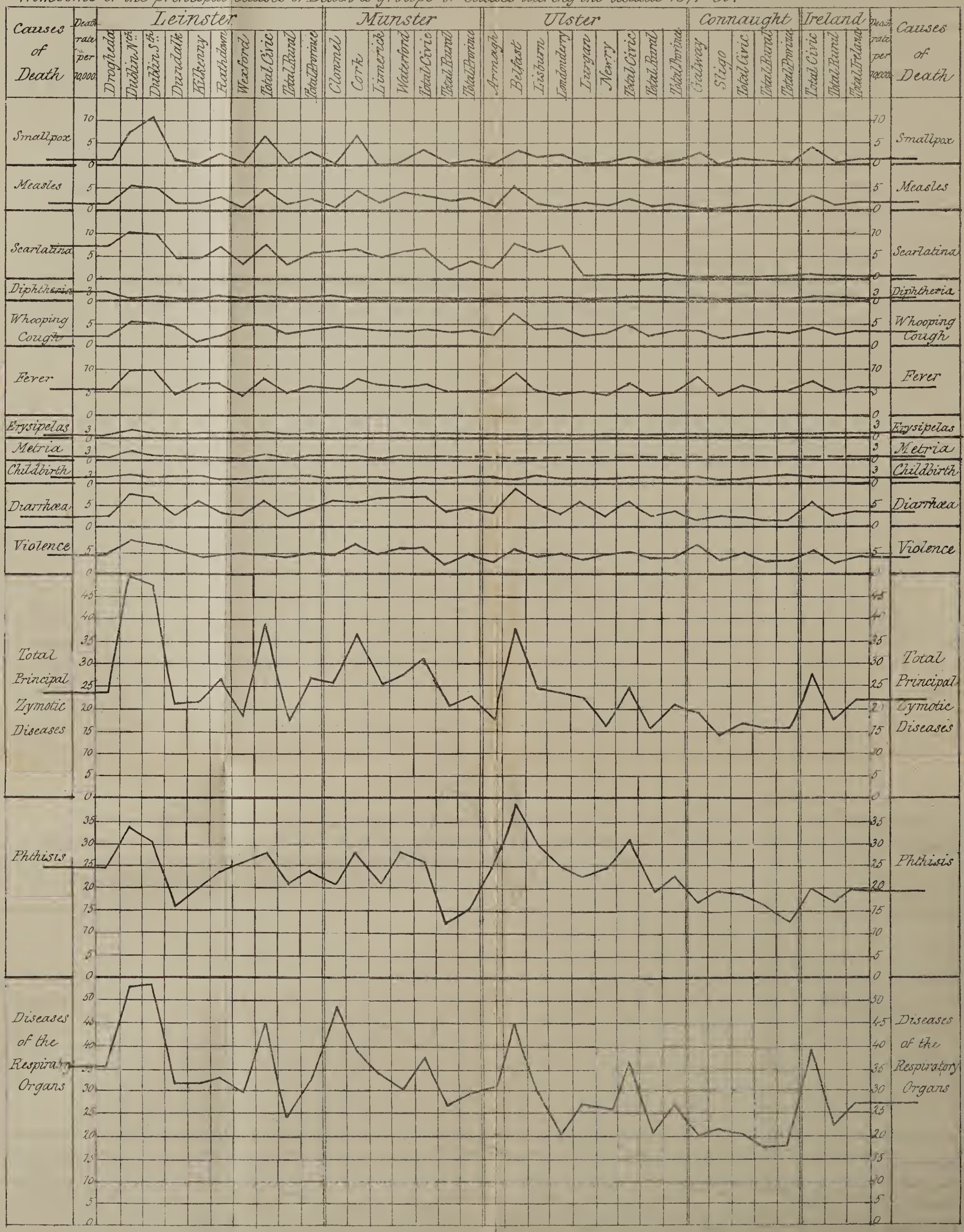
The mean of death-rate for lung diseases in Irish town populations over country populations is no less than 27·1 per 10,000.

If Tables III. and IV. be examined similar conditions will be found to exist in the sickness returns, as shown in the following statement:—

	Civic Districts		Rural Districts	
	Sickness		Sickness	
	No.	Rate per 10,000	No.	Rate per 10,000
Diseases of Respiratory Organs -	2,381	1·61	4,363	1·18
Phthisis - - - -	929	·63	1,695	·46
Total - - -	3,310	2·24	6,058	1·64

DIAGRAM II

Showing the relation between the death rates per 10,000 of the average population in Town & Country districts of Ireland from some of the principal Causes of Death & groups of Causes during the decade 1871-80.



Here we see that the rate of prevalence of diseases of the lungs on the Census night was 2·24 per 10,000 of the population in towns, as compared with 1·64 in the country districts. From the foregoing statement it is evident that the predominating causes of sickness and death in Irish towns are lung diseases, not, as many suppose, infective fevers. No doubt infective fevers have a great influence and are more prevalent in towns than in country districts, whether measured by the average decennial death-rate or by the Census disease-rate. The civic death-rate from the principal zymotic diseases was 32·2, and the rural 17·7 per 10,000, while the relative disease-rates were respectively 5·5 and 5·0 per 10,000 on persons living on Census night. This would point to a but slightly greater prevalence of infective diseases in town than in country, but a much higher rate of mortality among the affected persons. This, as regards the mortality, is exactly what might be expected from the relatively higher mortality from lung diseases already discussed.

Time would not permit me to analyse and remark upon any considerable number of the details set out in the tables and illustrated in the diagrams. I have already treated of some of the principal features. There are a few, however, which I think it well to point to more particularly. As already shown, the deaths from each cause or group of causes dealt with in the tables and diagrams, except childbirth, are higher in civic than in rural districts. First, to deal with the exception. I would here quote from the Decennial Summary of Births and Deaths, as follows :[a]—

"It is difficult completely to separate the statistics of deaths from puerperal fever and from childbirth, as they may be all put down to a common cause—namely, parturition, and no doubt a considerable number of deaths from puerperal fever, especially in the country, are returned simply as deaths from 'Childbirth.'

"The total number of deaths under these two heads was 9,295, or at the annual rate of 15·3 per 1,000 of married women within the child-bearing ages (namely, 15 to 55). The deaths from puerperal fever numbered 3,543, or at the rate of 5·8 per 1,000 of married women at the child-bearing ages, and the other deaths from childbirth numbered 5,752, or at the rate of 9·5 per 1,000 at the same age periods. The deaths from puerperal fever were at the rate of 2·5 per 1,000, and those from childbirth at the rate of 4·1 per 1,000 of the births registered, the two combined being equal to 1 in 151, or at the rate of 6·6 per 1,000 of the births registered.

[a] Loc. cit. P. 25.

"The Abstract (pages 98–101) shows that in every union in Ireland deaths from puerperal fever were recorded. Similarly, deaths from other forms of the affections of childbirth are also recorded in all Unions. Tables X. and XI. show the relative distribution of deaths from this group of disease between town and country. A result is shown by this comparison which differs remarkably from the results obtained where the town and country death-rates are compared for any of the other diseases or groups of diseases dealt with in these tables. The death-rates to the population from puerperal fever and childbirth combined are almost the same in town and country—namely 1·8 and 1·7 per 10,000 respectively; taken separately, however, the death-rate from puerperal fever, which is an infective disease, is slightly higher in town than in country, while in other forms of death from childbirth the mortality is greater in the country than in town.

"If the number of these deaths be compared with the number of births registered, we have the result as set out in the following statement:—

"TEN YEARS, 1871–80.

"'PUERPERAL FEVER' and 'CHILDBIRTH' in 'CIVIC' and in 'RURAL' UNIONS.

"In Civic Unions	deaths	from	puerperal fever	=	1 in 355 or 2·8	per 1,000 *births*	reg.
„ Rural	„	„	„	=	„ 415 or 2·4	„	„
„ Civic	„	„	childbirth	=	„ 278 or 3·6	„	„
„ Rural	„	„	„	=	„ 232 or 4·3	„	„
„ Civic	„	„	puerperal fever and childbirth combined	=	„ 156 or 6·4	„	„
„ Rural	„	„	„	=	„ 149 or 6·7	„	„
"Total deaths		from	puerperal fever	=	„ 396 or 2·5	„	„
„			'childbirth'	=	„ 244 or 4·1	„	„
„			puer. fever and childbirth combined	=	„ 151 or 6·6	„	„

"From this it appears that the relation of deaths from puerperal fever and childbirth combined to births registered, is for the whole of Ireland at the rate of 1 in 151 or 6·6 per 1,000, for puerperal fever alone it is 1 in 396 or 2·5 per 1,000, and for childbirth 1 in 244 or at the rate of 4·1 per 1,000 births. If, however, town and country are compared it appears that the mortality from puerperal fever in town districts is at the rate of 1 in 355 or 2·8 per 1,000 births, while in country districts it is 1 in 415 or 2·4 per 1,000, being slightly less. On the other hand, the deaths from 'childbirth' are proportionately less in town than in country; in the civic districts the rate is 1 in 278 or at the rate of 3·6 per 1,000, while in country districts it is 1 in 232 or 4·3 per 1,000 births. If the two be taken together the result is that deaths from parturition

are at the rate of 6·4 per 1,000 births in town as compared with 6·7 in country districts. It is clear that this excessive mortality from parturition can be attributed only to the less favourable circumstances under which lying-in women are treated in the country as compared with town. Many, no doubt, do not obtain any medical attendance, and in a considerable number of cases probably the poor women have no skilled assistance whatever at this critical time either in the way of a medical attendant or a properly trained midwife. When the generally low health of town populations is contrasted with the health of country populations a greater mortality from parturition (as from various forms of disease) might fairly be expected in the former than in the latter, and therefore it is quite clear that the explanation must be in the comparative neglect with which lying-in women are treated in the country parts of Ireland."

Another point worthy of note is that in the districts containing the largest towns, especially Dublin, Belfast, and Cork, the more important causes of death prevail to the greatest degree. This is especially notable in the case of Dublin, where in every case referred to in the tables, except in three groups, the mortality exceeds that of any other town district in Ireland. These three exceptions are whooping-cough, diarrhœa, and phthisis, in each of which the death-rate is higher in Belfast than in Dublin. In the case of whooping-cough the excess in Belfast as compared with Dublin may be accounted for to a great extent by the fact that the disease is principally one of childhood, and is most frequently fatal in very young children, of whom there are a greater proportion in Belfast than in Dublin, the former having a higher birth-rate than the latter. The excess of diarrhœa may be to some extent accounted for in a similar manner, but may also be somewhat influenced by the superior water supply of Dublin. The higher mortality from phthisis in Belfast must, I think, to a great extent be attributed to the occupations of the people, and the consequent large number of persons, especially young girls, employed as factory hands. It is a remarkable fact that while the deaths from phthisis were 33·4 and 30·0 for the Dublin districts, and 38·2 for Belfast, the deaths from diseases of the respiratory organs were 52·9 and 53·3 in Dublin, and only 49·9 in Belfast. This would point to the tendency of pulmonary affections in Belfast to assume the phthisical type more readily than in Dublin.

The foregoing remarks are intended more to draw attention to

this important subject than to treat of the details set out in the tables and illustrated in the diagrams. I would refer those who wish to follow up the subject in detail to the "Supplement," &c., containing the decennial summary already quoted and referred to.

I have not thought it advisable to enter into any comparison between the death-rates of Irish town populations and those of the populations of towns in the sister kingdoms or foreign lands. Such a comparison would be of great interest, and I hope will be instituted and worked out in detail. I am sorry to say that I anticipate that the result of such an inquiry would not be much to the credit of this country, and would fully confirm the observations made by Dr. H. C. Tweedy (Secretary to this Sub-section) in a very suggestive paper read by him at the Cork meeting of the British Medical Association in 1879. It is much to be regretted that Dr. Tweedy's paper was not published at the time. Perhaps its author may be persuaded to further elaborate, extend, and bring up to date the statistics upon which he grounded his remarks on that occasion.

ART. XX.—*A Case of Senile Dementia, with some Remarks on the Treatment of the Affection.*[a] By HENRY KENNEDY, A.B., M.B; Physician to Simpson's Hospital, and the Whitworth Hospital, Drumcondra.

THE following case I have thought worthy of record, as it seems to me to present some features not unworthy the notice of the Medical Section of the Academy. Probably any remarks will come in better after the case has been detailed:—

CASE.—An old lady, above eighty years of age, had the neck of her thigh-bone broken by a large dog, in his gambols, jumping up on her. The accident occurred in the West of Ireland, and fourteen days subsequently she was, with considerable difficulty, brought up to her home, at Kingstown, where she came under the care of Dr. Beatty, of that town. The accident occurred in September, 1884. Nothing particular was observed for a period of six weeks, when she began to get very restless and entirely sleepless, and she never ceased muttering to herself, nor did she recognise any of her family round her. This state went on day and night, though, during this period, many remedies were used, such as her condition seemed to require; still there was no amendment. Hitherto I

[a] Read before the Medical Section of the Academy of Medicine in Ireland on Friday, March 27, 1885.

had been in correspondence with Dr. Beatty, but I now saw her with him, and it was agreed that she should be put upon the use of the extract of hyoscyamus, of which she got three grains three times a day. At the end of a fortnight there was little change in her state, but her family thought that, if anything, she was quieter. It was now determined that a quarter of a grain of nitrate of silver should be added to each pill, but neither did this change produce any more amendment, and, finally, we agreed to give her mercury in small doses, still combined with the hyoscyamus. Under this plan it was pleasant to observe the slow, but steady, progress she made towards recovery. At the end of a fortnight she was, in a marked degree, better, and, when a month had elapsed, we were able to give up the mercury, as both her mind had returned to its natural state, and the terrible restlessness subsided. Her sleep, however, had not come round, and, according to the account of her family, she literally did not sleep night or day. Under these circumstances a plan was put in force which happily succeeded in causing sleep. It consisted simply in placing the patient with her head to the north. On this latter point I will speak again, and at the present moment shall only add that both her mental state and sleep seem to be completely restored, and Dr. Beatty can bear out this statement to the fullest.

The details of this case have been purposely compressed into the smallest space. It will be necessary, however, to bear in mind that it occupied seven months, during most of which period the strain thrown on her family was most trying, whilst the health of the patient herself was seriously shaken. Besides the duration of the attack, it is also worthy of note that the patient took her food all through, and whatever was given her was swallowed automatically, as it were.

There are few who have been in practice any length of time who have not met cases similar to the one detailed—in fact, they constitute a very important class, and many of the aged suffer from the state. All the standard works on mental diseases contain accounts of it, and it, of course, presents, like other affections, an endless variety in degree. Our asylums all contain instances of the disease. Restlessness is its great and leading feature, and I have known different parties, in easy circumstances, affected with this state alone, during the last few years of their lives. They were quite able to care for themselves, at the same time that they were affected with the constant desire to go about, sometimes through the city, and again taking even journeys on the railways without any ostensible object. Independently of what is known as ordinary bodily exercise, the restlessness may show itself in many forms, and

when an individual in advanced life takes to the felling of trees the question at once arises, is such a party affected with it?[a] But though this restlessness may exist *per se* it is more commonly united with a disturbed mental state, and to this again may be added sleeplessness, as occurred in the case with which I commenced these remarks.

And this leads me on to the question of treatment, as to how far relief can be given to these trying cases. I recollect the period—not so very long ago—when it was not thought advisable to make any special effort to afford relief—at least it was not attempted; and beyond watching the patient, nothing else was done. But science has given us new powers, and the introduction of chloral has afforded us most valuable help, in some at least of the class of cases of which I have been speaking. It has some drawbacks, however, and I believe there are other drugs which are more generally useful—of these I would name hyoscyamus. I need scarcely say that this was an old remedy for mental affections, and why it should have fallen into disuse it is not easy to say. It is quite true that at the present day it is still used for puerperal mania. The late Sir Dominic Corrigan used it freely in the sleeplessness of fever; and, more recently still, its alkaloid has been used in some of the English asylums, and with truly marvellous results, such as where the patients were most violent and destructive, and utterly sleepless. In these cases it was used subcutaneously. But, even keeping these facts in mind, it does seem to me that this drug is in less general use than it might be, and particularly in the form of mental affection to which your attention has been drawn. For several years I have myself used it, and in the form of the simple extract. It is in this form it can be most easily and effectively given; but if we want to attain its full effects it must be used at regular intervals in full doses, and continuously. Some think that a dose at bedtime will be enough, and when this fails it is given up. But this is a mistake. Let it be given three times or oftener through the day, and if benefit is to come it will soon declare itself; for, like all other medicines, this one, too, may fail, and in the very case before us its effects were not as striking as in other similar instances I had seen. It was the distinct opinion of the family, however, that from the time the medicine was begun the restlessness of the patient had somewhat improved. Still the change was not of that decided

[a] I know of an individual at the present time who is very far advanced in life, and who has taken to climbing into trees, causing much anxiety to his friends.

character which satisfied either Dr. Beatty or myself, or would justify us in simply continuing the hyoscyamus. It was then the idea occurred that, possibly, mercury, cautiously given, might be of use, and under this impression gray powder, to the amount of two grains each day, was administered, joined at the same time with the extract of hyoscyamus, which she had been already taking, in doses of three grains three times a day. Under this plan it was really interesting to observe the improvement which began within the next eight days, and went on continuously till her ordinary mental state was quite restored.

But it will be asked here—Why venture on such a remedy as mercury, and in such a case? I can only answer that all the remedies known to us had got a full trial, and combined in a variety of ways. Chloral did not suit her at all—in fact, everything had failed to do good. In the next place, I had been long in the habit of using mercury in small doses in those cases where cerebral symptoms were present in connexion with the fatty diathesis, and the result had been most striking and satisfactory. I speak of such symptoms as giddiness, slowness of speech, tendency to stupor, forgetfulness, and a tendency to paralysis, rather than the disease itself. When such are present I repeat that mercury frequently acts like a charm, and I have used it sufficiently often to enable me to speak with confidence on the point.

In the last place, I was familiar with the changes which go on, almost as a matter of course, in those above seventy. The brain, we know, begins to atrophy, whilst its place is supplied by serous effusion both on the surface and into the substance of the organ itself. And here I cannot but question the views of some of the London physicians, and of Dr. Wilks in particular, who state that these serous effusions are of no consequence whatever, and do not affect the health of the individuals either mentally or physically. I cannot accept such a view, and, on my part, believe that the state is essentially one of disease, and gives rise to symptoms which are quite tangible. Besides, I have seen several instances where a sudden attack of apoplexy ended life, and when these were examined *post mortem* nothing but a large serous effusion with a wet brain was found. There was no rupture of any blood-vessel, and, in point of fact, the patients had died from serous apoplexy, described long since by Abercrombie. In addition to these points, I may again allude to the very marked effects of the small doses of mercury already spoken of, and which certainly have, in most cases, a control

over those cerebral symptoms already described. The effect in many cases, it is true, is but temporary; but the medicine may be used again and again, and with the same beneficial results. It was thoughts like these which induced me to suggest mercury in the case detailed, and with such satisfactory effects.

In the last place, I would ask attention to the measure adopted with the patient to induce sleep, which had not returned with the improvement in the other symptoms. I had read that the position we occupy in bed had a material influence on our sleep, and that the best position was with the head to the north; and when I became attached to the Cork-street Fever Hospital I was determined to test the plan, and certainly the results were quite sufficient to satisfy me that a quieting influence was exercised by the measure. It did not affect the majority of the patients, but there was quite enough to prove to me that it was a plan which should at least be tried. It seemed to me to influence children more than adults, and I cannot doubt that it is more potent amongst the middle and upper ranks than amongst the labouring classes. We know, indeed, that the former, when attacked with fever, are very much more likely to suffer from sleeplessness than the latter, and that then the symptom may become a most formidable one, affecting life itself. More could be said on the point, but these remarks must close; and it only remains to state that, in the case brought before you this evening, the patient was directed to have the position of her bed altered, and, strange to say, she slept well the very first night, and has continued to do so for the last month, though before that time her nights were entirely sleepless. It will be allowed, I think, that the plan proved signally successful.

ART. XXI.—*Basic Aural Dyscrasia; being an inquiry into a condition of system disposing to Aural Disease, now for the first time described as the Basic Aural Dyscrasia, involving an explanation of the mode of causation of Tinnitus Aurium, and a description of a hitherto unnoticed form of Deafness—Vascular Deafness.* By ROBERT T. COOPER, M.A., M.D. Univ. Dubl., London.

[*Continued from page 280*].

LET us, before proceeding further into this matter, again revert to our comment upon the structural peculiarities of the ear. Constructed as the ear is, we find there are certain expansions or

strands of tissue along which disease-processes coming from a distance must travel in order to effect a lodgment in the ear.

First.—There is the skin or cutaneous expansion along which disease may travel *viâ* the external auditory meatus; this very obvious route is more or less dwelt upon in the descriptions given of the diseases of the auricle in the usual treatises upon aural disease; it is especially observable in cases of otorrhœa in children, following upon, or in association with, post-aural and occipital eczemas, and is not an uncommon sequence of a severe erysipelas of the scalp in adults.

There is, however, one variety of this affection that necessitates separate description, as we believe we are now pointing it out for the first time. I do not remember meeting with any but the one case of it. It occurred in a lady about thirty-five years of age, not subject to gout or eczema of other parts of the body, but who came from a gouty stock, and who complained that every night she would be awoke, as she lay on her right side, by a feeling as if something had fallen in her ear, accompanied by temporary deafness. Beyond the nuisance of being awoke by it, there was no inconvenience occasioned. The distress, however, was quite sufficient to make her miserable, and to give her a succession of restless nights. On examination of the tympanal membrane I found a distinct eczematous patch, round in shape, and of about four lines in diameter, situated around the extreme end of the malleus handle. Its appearance was moist, exactly like that of an eczematous patch, and its moisture was confirmed by the simple expedient of blowing a powder, consisting of 1 gr. of tannic acid to 10 grs. of sugar of milk upon it. The powder was found to adhere more closely to the eczematous patch than to the other parts of the membrane, thereby proving it could not be a perforation. For in the case of unhealed perforation a powder blown into the meatus invariably dissolves away in the fluids of the middle ear, leaving its dry particles upon the surface of the membrane—a proceeding that constitutes a valuable means of diagnosticating a perforation where doubt exists.

It was evident the eczema caused a circumscribed flaccidity of the membrane, established as it was by the slight, partial bulging of the diseased portion upon Valsalvian inflation, and that this allowed of a falling down or relaxation of the ossicular chain, thereby explaining the unpleasant sensation felt. The lady became quite well by resorting to the above expedient, and, as she had

previously consulted a leading aurist without recognition of or relief to her infirmity, I am additionally emboldened to suppose it a hitherto unrecognised condition.

Second.—We have the mucous expansion, sufficiently, if not more than sufficiently, dwelt upon in the recognition of Eustachian obstruction in our ordinary treatises upon aural diseases.

Third.—We have the periosteal strata, so intimately connected with the cutaneous and mucous expansions that we need not at present dwell upon its influence.

Fourth.—We get the nervous expansion, by which disease enters the internal ear by way of the auditory nerve. This we find ourselves compelled to deal with in this connexion, as, without doing so, our position in describing a new form of deafness would be open to very natural misconception. And, first, we would point out how very limited is the definition given of this disorder by the leading authorities upon aural questions of the present day.

Thus, for example, Roosa[a] expresses himself:—"Nervous deafness may be defined to be a primary affection of the auditory nerve or labyrinth, or both. It should be carefully distinguished from other forms of impaired hearing that are accompanied by symptoms of general nervous disease, or by evidences of secondary affections of the labyrinth, such as vertigo and tinnitus aurium. Primary and independent affections of the labyrinth, or internal ear, are happily the most infrequent of aural diseases. We know very little of the nature of these affections, and we have as yet absolutely no means of treatment for them that can be said to be at all successful."

Again, Dr. Burnett[b] says:—"Strictly, nervous deafness must be regarded as among the greatest rarities."

The fact is our literature does not place us in a position to diagnosticate the early stages of nervous deafness, and therefore it is, except when ushered in as a pronounced affection, with absolute and complete loss of hearing power, practically non-existent.

The tuning-fork as an instrument of diagnosis has, I am satisfied, been much overrated. The conclusion come to, that when the perception of its vibrations, transmitted through the bones of

[a] Diseases of the Ear. By St. John Roosa, M.D. New York: Wood & Co. 1876. P. 485.

[b] The Ear: its Anatomy, Physiology, and Diseases. P. 595. London: J. & A. Churchill. 1877.

the head, is lessened, the auditory nerve expansions or the *perceiving media* are affected, is oftentimes fallacious.

I have seen cases where simple semilateral headache was followed by markedly lessened perosseous hearing, and yet the subsequent progress of the cases was very satisfactory.

Dr. H. Knapp,[a] of New York, quotes from "Hermann's Handbuch," Vol. III., Part 2, p. 26, on the Physiology of Audition, this passage :—"The peculiarity that a tuning-fork is so well heard from the cranial bones was originally explained by the supposition of a direct transmission of sound-waves to the labyrinth, apparently the most favourable conditions for an intense transmission of sound. This view cannot longer be accepted."

The experiments of Politzer, Lucæ, and Schmidekam show that a tuning-fork, held on the cranium, sets the ossicles and membrana tympani in vibration ; and Dr. Knapp gives a case where relief of tension upon the ossicular chain was followed by undeniable improvement in cranial conduction of sound, showing that perosseous hearing is of little account as a diagnostic procedure in the early stages of deafness. It is admittedly probable that there may be a certain gradation from unmistakable vascular deafness, hereafter to be described, to the pathological change represented by auditory nerve paralysis; but whether this ever is ushered in as an independent affection, due solely and completely to steadily progressive alteration in the neuroglia, and apart from alterations in the vascular network of the ear, is a matter by no means indisputably proven.

Dr. Buzzard,[b] of London, more than suspects a tabetic form of the affection. This I have never been able to confirm, but have seen cases that led me to suppose the degenerative changes accompanying vascular deafness may, in some instances, course along the nervous rather than the more usual vascular, muscular, or mucous structures, and may, consequently, terminate in confirmed paralysis of the auditory nerve. Duchenne, Remak, and Topinard have each recorded instances, says Buzzard, in which the auditory nerve was affected (in tabes dorsalis), the latter mentioning seven cases in which he had noted this condition; and Dr. Buzzard[c] wisely counsels an examination of the state of the patellar tendon reflex in all cases of "nervous deafness."

[a] Some Remarks and Observations on Bone Conduction. Transactions, American Otological Society. Vol. II. Part 4. Boston. 1880.

[b] Diseases of the Nervous System. P. 218. Philadelphia : Blakiston, Son & Co. 1882.

[c] Op. cit. P. 273.

It is obvious, therefore, that the subject of nervous deafness is one for future investigation, and that the only thing certain about it is that it is not a common affection, and that the group of symptoms to which this term has hitherto been applied does not accurately represent any such infirmity.

So much then for the nervous expansion.

Fifth, and lastly, we get what is without question the most important of all the structures, from a pathological point of view—the vascular structures that enter into and convey nutritive material wherewith to supply the tissues of the ear.

The recognition of a vascular deafness is then necessitated upon consideration of the anatomical constituents entering into the formation and ministering to the functions of the ear.

A tabular *résumé* of 30 absolutely consecutive and unselected cases of ear diseases now under treatment will explain our position more clearly. We might easily collect 300 cases. The lesson to be learned from them all would, however, be precisely the same :—

Case I.—Mr. Ed. G., aged sixty-nine. Temperament,[a] sanguine; deaf both sides; mode of onset, gradual; duration, one year; affection, vascular deafness; tinnitus, none; state of cervical blood-vessels, loud arterial and venous bruits right side, venous slight left; hearing distance, $2\frac{1}{2}$ in. R., 6 in. L.

Case II.—Miss H., aged forty-two. Temperament, bilious; deaf, right only; onset, gradual; duration, three or four months; affection, dyscrasia; tinnitus, slight singing in left ear only; state of cervical blood-vessels, loud venous bruit R., slight arterial L.; hearing distance, nearly normal, both.

Case III.—Mr. E. Y., aged eighty. Temperament, gouty; deaf both; onset, gradual; duration, many years; affection, parakusis Willisii; tinnitus, musical and pulsative, both; state of cervical blood-vessels, loud arterial and venous bruit R., arterial only L.; hearing distance, feeble contact, both.

Case IV.—General S., aged fifty-eight. Temperament, plethoric; deaf, both; onset, gradual; duration, six or eight years; affection, vascular deafness; no vertigo or tinnitus; state of cervical blood-vessels, slight arterial bruits, both; hearing distance, off contact, both.

Case V.—Miss T., aged twenty-seven. Temperament, plethoric; deaf, neither; onset, gradual; affection, cerumen dyscrasic; tinnitus, singing on lying down; state of cervical blood-vessels, loud arterial and venous bruit R., arterial only L.

[a] We are employing the term in a wider sense than is strictly correct.

Case VI.—Mr. F. O. E., aged fifteen. Temperament, anæmic, bilious; deaf, both; onset, gradual; affection, recurrent deafness, vascular; duration, two years; tinnitus, none; state of cervical blood-vessels, loud arterial and venous bruits R., moderate arterial and venous bruits L.; hearing distance, 6 in. R., 14 in. L.

Case VII.—Mr. T. K. T., aged thirty-seven. Temperament, plethoric; deaf, both; onset, scarlatina; duration, thirty years; affection, otorrhœa, both; state of cervical blood-vessels, distinct arterial bruits, both; hearing distance, none R., 3 in. L.

Case VIII.—Mrs. C. L., aged sixty-two. Temperament, plethoric, stout; deaf, both; onset, gradual; duration, ten years R., one or two years L.; affection, vascular deafness; tinnitus, "eternal" singing; state of cervical blood-vessels, venous bruit R., slight; hearing distance, 16 in. R., off contact L.

Case IX.—Master C., aged ten. Temperament, catarrhal, otorrhœa, off and on, all life; state of cervical blood-vessels, outer arterial bruit L.

Case X.—Mr. T., aged thirty-five. Temperament, bilious; deaf, left otorrhœa; state of cervical blood-vessels, arterial bruits both sides.

Case XI.—Sophia L., aged thirty. Temperament, plethoric, scrofulous; deaf, both; onset, gradual; affection, vascular, parakusis Willisii; tinnitus, slight singing; state of cervical blood-vessels, arterial only R., slight arterial and venous L.; hearing distance, 3 in. both.

Case XII.—Ed. S., aged forty-five. Temperament, sanguine, paralytic history; onset, sudden; duration, seven or eight years; affection, vascular (?), parakusis Willisii; tinnitus, slight; state of cervical blood-vessels, loud venous and arterial bruits, both; hearing distance, off contact.

Case XIII.—Miss P., aged forty. Temperament, nervous; onset, gradual; duration, ten or twelve years; affection, vascular deafness, parakusis Willisii; tinnitus, various; state of cervical blood-vessels, arterial bruits *both*, worse on right; hearing distance, no contact hearing.

Case XIV.—Captain A., aged fifty-eight. Temperament, full habit, plethoric; onset, gradual, cause unknown; duration, ten years; affection, vascular deafness; tinnitus, absolutely none; state of cervical blood-vessels, distinct venous bruit on right side, none other R. or L.; hearing distance, both off contact; other symptoms, diplopia on straining the eyes to look outwards.

Case XV.—Miss E., aged thirty-two. Temperament, bilious tendency; onset, gradual; duration, seven or eight years; affection, vascular deafness, parakusis Willisii; tinnitus, pulsative and musical; state of

cervical blood-vessels, loud arterial and venous bruits, both; hearing distance, 3 in. R., 8 in. L.

Case XVI.—Miss C., aged thirty. Temperament, anæmic tendency; onset, gradual; duration, five years; affection, vascular deafness; tinnitus, pulsative and musical; state of cervical blood-vessels, arterial and venous bruits, both; hearing distance, 40 in. R., 35 in. L.

Case XVII.—Mr. H., aged forty-seven. Temperament, diabetic; onset, gradual; duration, five or six years; affection, vascular deafness; state of cervical blood-vessels, loud venous and arterial bruits R., arterial only L.; hearing distance, 17 in. R., 5 in. L.

Case XVIII.—Miss T., aged forty-seven. Temperament, full habit, rheumatic; onset, gradual; duration, seven years; disease, vascular deafness; tinnitus, slight, pulsative; hearing distance, 2 in. R., off L.

Case XIX.—Mr. J. H., aged forty-four. Temperament, full habit, gouty; onset, gradual; duration, twelve years; disease, vascular deafness, parakusis Willisii; tinnitus, pulsative; state of cervical blood-vessels, loud singing and cooing bruit R., none L.; hearing distance, $3\frac{1}{2}$ in. R., off L.

Case XX.—George H., aged sixty-seven. Temperament, nervous; onset, gradual; duration, ten or twelve years; disease, vascular deafness; tinnitus, none; state of cervical blood-vessels, loud venous bruit L., no trace of arterial.

Case XXI.—Miss L., aged twenty-four. Temperament, plethoric; onset, gradual; duration, three years; disease, vascular deafness; tinnitus, singing; state of cervical blood-vessels, arterial and venous L., arterial only R.

Case XXII.—Mr. W. H. J., aged twenty-one. Temperament, full habit; onset, in infancy; affection, nervous (*i.e.*, very imperfect per-osseous hearing) deafness; tinnitus, singing and shrieking; state of cervical blood-vessels, arterial bruit L., venous bruit R.; hearing distance, 3 in. R., off L.

Case XXIII.—Mr. J. E. H., aged twenty-six. Temperament, full habit; onset, gradual; affection, vascular deafness; tinnitus, none; state of cervical blood-vessels, arterial bruit, very distinct, L.

Case XXIV.—Miss W., aged seventy-three. Temperament, nervo-sanguine; onset, gradual; affection, vascular deafness; tinnitus, occasional singing; state of cervical blood-vessels, no bruits; hearing distance, 2 in. R., 3 in. L.

Case XXV.—Mr. J. L. B., aged seventy-four. Temperament, full habit; onset, gradual, nine or ten years; affection, vascular deafness;

tinnitus, rattling of carriages; state of cervical blood-vessels, arterial bruits R. and L., venous bruits R. only.

Case XXVI.—Miss T., aged twenty-three. Temperament, sanguine, full habit; onset and affection, otorrhœa from six years old, recurrent; tinnitus, throbbing, worse on lying down; state of cervical blood-vessels, loud venous and arterial bruits R., arterial only L.; hearing distance, R. normal, L. 30 in.

Case XXVII.—Miss C., aged twenty-four. Temperament, inclined to anæmia; onset, gradual; affection, vascular deafness; tinnitus, "knocking;" state of cervical blood-vessels, loud venous and arterial bruits R., arterial only L.; hearing distance, both 20 in.

Case XXVIII.—Mrs. G., aged fifty-eight. Temperament, bilious; onset, gradual; affection, vascular deafness; tinnitus, pulsative and musical; state of cervical blood-vessels, arterial bruits both sides, no venous; hearing distance, R. normal, L. 40 in.

Case XXIX.—Miss H., aged twenty-four. Temperament, full habit; onset, gradual; affection, vascular deafness; tinnitus, surging and singing; state of cervical blood-vessels, venous and arterial R., arterial only L.; hearing distance, R. 8 in., L. contact.

Case XXX.—General M'M., aged fifty-five. Temperament, full habit; onset, R. since childhood, L. accident (supposed) to head; affection, vascular deafness; tinnitus, none; state of cervical blood-vessels, R. arterial and venous, slight, L. arterial and venous, distinct; hearing distance, R. 1 in., L. contact.

I have in this list emphasised the symptom, "hearing better in a noise," *Parakusis Willisii*, the name it is now commonly known by. This it has been customary with writers upon aural subjects to refer to the effect of the mechanical influence exerted upon the membrano-stapedial attachment, and the waking-up of the stiffened and rigid mucous membrane of the tympanal cavity (Toynbee). Such explanation, I am inclined to think, judging entirely from the descriptions of patients, gives us, in some cases, the correct interpretation of it; at all events, I go so far as to say that this symptom is sometimes indicative of an advanced degree of proliferous structural change.

I feel equally convinced, however, that this seemingly imaginary symptom is often to be explained by the simple supposition of the outside noises neutralising or overpowering the tinnitus complained of by the patient. In other instances, again, patients themselves have given an explanation that in their particular

cases appeared reasonable enough—viz., that, being deaf, they were not alive to the sounds induced by the conveyance in which they travelled, or the vibrations of surrounding machinery, and therefore heard voices, as those of perfect hearing people would be, raised for the occasion. This is by no means an unnecessary matter to make close inquiry concerning; as in the first and last class of cases it is symptomatic of a very obstinate case, while in the second class of cases it possesses no more meaning than that tinnitus is present. In no case have I ever known this symptom present where one ear only was deafened by disease. The late Dr. Peter Allen considered this symptom indicative of a relaxed tympanal membrane, and referred the improvement in hearing to the reflex contraction of the tensor tympani muscle, set agoing by the mechanical vibrations.[a] Unfortunately for this explanation relaxed tympanal membrane can hardly be said to be indicative of very intractable cases, which the Parakusis Willisii, more often than not, is undoubtedly found to be.

Then, in regard to the bruits heard in the subclavian blood-vessels,[b] in some cases they are not at all times present. Before pronouncing upon their absence we should examine the patient on several occasions and in different postures of the body—for example, when recumbent and erect.

Again, with women we find them more marked during the menstrual epoch, and particularly noticeable in those who suffer, as many deaf women do, from dysmenorrhœa.

The arterial bruits particularly are not constant. They are best heard upon the patient, after sitting, assuming the erect posture, and present the peculiarity of sometimes vanishing, even while the stethoscope is placed over the artery. These I am in the habit of describing as "vanishing bruits," and have several times had the opportunity of pointing out their existence to other practitioners. Where the beating of the heart is intermittent, they vanish during the intermission, but in other cases no such explanation of their disappearance is forthcoming. The important point to remember about them is that, as we are about to explain, they

[a] Lectures on Aural Catarrh. By Peter Allen, M.D. London : J. & A. Churchill. 1871.

[b] Those who wish to enter upon the subject of aural murmurs will find an interesting and able paper by Dr. Orne Green, of Boston, where they are treated of from quite a different standpoint from ours, on Objective and Subjective Murmurs in the Ears, in the July number of the Transactions of the American Otological Society. 1878. Pp. 259-269.

undoubtedly may be looked upon as an early manifestation presaging the development, at a subsequent period of life, of atheromatous decay of the arterial walls,[a] and as such they obviously demand prompt recognition and treatment—the more so as the time at which the subsequent tissue change makes its appearance seems entirely regulated by the patient's intervening state of health.

Pathological alterations in the resiliency and resisting power of the arterial wall will, in after-life, convert the vanishing into persistent bruits; hence they are a constant feature in aged atheromatous subjects.

They are to be met with in cases of great disturbance of the sympathetic, accompanied by debility, in chorea, also among onanists, or after abnormal seminal emissions. Besides, it is to be noted that they are not heard all along the artery, but only at certain stages of the subclavian's course, showing that they must not be looked upon as merely transmitted from the heart, the more so as they are not invariably accompanied by cardiac murmurs.

But, obviously, we must enter into a fuller consideration of their nature.

[a] It is interesting to observe that Dr. Octavius Sturges (in a little work on Chorea and Whooping Cough—Smith, Elder & Co., London, 1877) has observed a similar feature regarding cardiac bruits. Thus, at p. 141, he remarks :—"At first it was noticed that the heart sounds were natural, but subsequently, during the time of listening, a distinct regurgitant mitral bruit became audible, which continued for a few beats, and then disappeared. This condition of things recurred on many occasions, and was verified by several observers, though the murmur was more often absent than present. It was the more striking because, unlike the so-called 'hæmic' or 'anæmic' bruit common in chorea, this blowing sound made its presence at once obvious, and would suddenly break in upon the ear, while listening to what seemed a quite normal first sound, and then as suddenly disappear. It was thought that muscular exercise tended to develop the morbid sound, but of this I was," says Dr. Sturges, "by no means certain." Again, Trousseau, in his admirable lecture on True and False Chlorosis, with reference to these blowing murmurs, and after showing that the blood is deteriorated, goes on to explain :—"It is at this point that the too much neglected action of the walls of the vessel plays its part. It matters little whether the parietes of the vessels become paralytically relaxed or spasmodically contracted ; the important point is the occurrence of nervous disturbance of a temporary or fugitive character, like everything which pertains to life—a disturbance which temporarily modifies the circulation in such a way as to produce a contracted column, and, as a consequence of that, a blowing vascular sound. We can thus understand how it is that the blowing sound may appear and disappear in the course of the same exploration, as observed by Drs. Peter and Parrot. Moreover, the strength of the blowing sound is greater if, in addition to the nervous state of the vessel, there exist greater fluidity of the blood."—(Lectures on Clinical Medicine, by A. Trousseau, M.D. New Sydenham Society's Translation. Vol. V. P. 105.)

That these venous and arterial bruits are not to be regarded as indicative of anæmic states of the system is evident from their all but constant occurrence in plethoric subjects afflicted with aural enfeeblement. A glance at the above list of cases will forcibly demonstrate this.

Moreover, recognised authorities have long abandoned the idea of these murmurs being necessarily representative of anæmic states of the system. To go no further than the well-known work upon the "Practice of Medicine," by Dr. Aitken, the author, discussing these arterial and venous bruits, states:—"These venous murmurs are seldom absent in well-marked anæmia. Nevertheless, anæmia is not to be positively inferred from the mere presence of any one of these murmurs."[a]

Chlorosis, in which of course these murmurs are typically present, must be looked upon, I hold, as an affection quite distinct, and standing apart from ordinary idiopathic anæmia. My own views of its ætiology are, as far as I know, original.

Regarding the blood-discs, as, of course, we are entitled to do, as portions of living tissue, nourished by the agency of vital force, I look upon them as afflicted in chlorosis with the same degenerating influence as predominates upon the arterial and venous walls. As, however, the duration of the lifetime of the blood-discs is naturally a brief one, the infliction of such morbific influence still further shortens their vital career, and accounts for the striking disproportion in which they exist to the other constituents of the blood-stream in this disease. Chlorosis would, therefore, represent an extension of a painless irritability of fibre from the walls of the blood-vessels to their contained cellular constituents.

We all remember Professor Draper's feeling passage.[b] Writing of these blood-cells, he says:—"But though in this manner these little organisms perform their duty, it is only for a time. They may take oxygen from the air-cells, and give it up in the system, and do this perhaps many thousand times, but it comes to an end at last. The incessant motion stops, and the worn and exhausted disc is brought to its term. By degrees, as old age steals over it, it becomes corrugated and relaxed."

To continue to regard these bruits as merely "Functional," is simply an abuse of language; functional they certainly are in the

[a] Practice of Medicine. Sixth Edition. Vol. II., p. 82. London: Charles Griffin & Co. 1872.

[b] Human Physiology. P. 129. New York: Harper, Brothers. 1865.

sense that, unlike purely cardiac bruits, they do not represent, though obviously they may be associated with, established valvular lesions of the heart; functional they cannot be in regard to the vascular structures in connexion with which they are found.

It is time the profession gave over speaking of functional murmurs; if the blood, in coursing through the arteries and veins, gives off sounds contrary to those associated with a condition of system such as we denominate health, this alteration can be reasonably explained only upon the supposition of there being a measure of structural change—be it permanent or transitory—in the healthy disposition of the tissues, and therefore not functional, as in medical language we understand the term.[a]

[*To be concluded.*]

CUTANEOUS ADMINISTRATION OF SALICYLIC ACID.

In a note in the *New York Medical News* of February 14, Dr. Randolph and Mr. Samuel S. Dixon call attention to the fact that when salicylic acid is applied to the uninjured skin, rubbed up in a thin paste with olive oil, the drug is absorbed, and its presence can be demonstrated in the urine. Considering that the internal administration of salicylic acid and its salts is not infrequently capable of producing gastric irritability, the advantages of inducing its cutaneous absorption—if these observations are confirmed by other practitioners—are apparent. In some of the six cases reported in which this method was used with relief, with one exception, twenty grains of the acid were rubbed into a paste with olive oil, and gently smeared in each axilla. In another case the acid and oil (℥ij to ℥j) were spread upon absorbent cotton, and the whole gently wrapped around the knee.

TOOTHACHE.

Dr. Irwin writes to the *N. C. Med. Journal* that cinnamon bark destroys the sensitiveness of the dental nerve, and suspends the pain of toothache almost immediately. The method of using is simply chewing the bark and retaining the saliva as long as possible.—*Exchange.*

[a] In a recent work on the Origin of Anæmic Murmurs, by Dr. J. K. Fowler, the following significant passage occurs :—"Virchow, as the result of the examination of cases of chlorosis, has put forward a theory which ascribes that condition to an arrest of development of the vascular system. He has found, in these cases, an abnormal narrowness of the aorta and its branches, an irregularity in the mode of origin of the large trunks, and also of the intercostal arteries. In association with these changes the heart may be either stunted in growth, dilated, or hypertrophied. The walls of the large vessels are described as much thinner than normal, and the tunica intima as presenting areas of fatty degeneration."

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Beiträge zur pathologischen Anatomie und Physiologie. Herausgegeben von Professor Dr. Ernst Ziegler, in Verbindung mit Dr. C. Nauwerck. Erstes Heft. Jena: Gustav Fischer. 1884. Pp. 174.

This fasciculus of a new work, emanating from the school of Professor Ziegler in Tubingen, contains four papers. The first, by Nauwerck, is entitled "Contributions to the Knowledge of Bright's Disease," and consists of four chapters. The first, on the "Pathogenesis of Morbus Brightii," deals chiefly with the question as to the primary seat of the morbid changes in this disease. The literature of the subject is gone into at some length *more Germanico*, and then the author records the results of his own observations made on seven cases, all of acute nephritis, for the most part arising in the course of or subsequent to diphtheria. The clinical histories and *post mortem* appearances are carefully given, and the microscopic changes in the kidneys are very fully and minutely described. He concludes, against the exclusive view of Weigert, that the changes are of a degenerative kind, and always commence in the epithelium of the Malpighian bodies or of the tubes, and that the changes in the connective tissue and vessels are secondary and of a reactive character. In many cases, it is true, the lesions in the secreting epithelium are the first discoverable anatomical signs of commencing inflammation; and further, it is possible that such parenchymatous lesions, especially if they have a necrotic character, may produce secondary inflammation. But it must be maintained that an inflammation of the kidney with the characters of exudation and proliferation may exist without alteration of the specific tissue elements; and further, that if such are at the same time present, neither the relative distribution of the different lesions nor other grounds always exist to show that the inflammation is of a secondary reactive kind.

The second chapter is on "Morbus Brightii occurring in con-

nexion with Croupous Pneumonia." The causation of these cases is attributed to the presence in the kidney of Friedländer's micrococcus pneumoniæ, which has been found by Nauwerck in fatal cases. In this chapter will be found interesting observations bearing on the nature of pneumonia and on the so-called secondary inflammations which sometimes complicate the pulmonary affection.

Chapter three, on "Acute Glomerulo-nephritis," contains a very interesting summary of the opinions which have been put forward on the nature of this condition, from which it appears that a proliferation of the endothelium of the glomerular capillaries has never yet been certainly demonstrated. A case is recorded of a man who, in the course of diphtheritic inflammation of the larynx and bronchi, was suddenly attacked with uræmic convulsions and died within twenty-four hours. The changes in the kidneys were almost confined to the glomeruli; and here, while the affection of the epithelium was insignificant, the evidences of inflammatory proliferation of the endothelium of the capillaries and of the vasa efferentia were conclusive. To the impairment of the circulation through the inflamed vessels the severe symptoms are attributed.

In the fourth chapter the details of a case of poisoning by tincture of opium are given. Among other symptoms there was suppression of urine for twenty-four hours, followed by scanty secretion containing albumen, blood, casts, and epithelium. The patient recovered, so that the condition of the kidney is only a matter of conjecture. Experiments on rats and dogs gave negative results as regards the production of a nephritis by opium. It is supposed that the symptoms were due to the great lowering of arterial pressure and over-distension of the veins, such as occurs in uncompensated cardiac disease.

These papers, of which we have been able to give only the barest outline, show evidence of careful and honest work, and are a valuable contribution to the difficult and perplexing subject of renal pathology.

The second paper, "On the Histogenesis of Periosteal Callus," is by Dr. E. Krafft. He finds that immediately following a fracture there is a reactive inflammation, which lasts for a few days, but takes no part in the regeneration of the bone. Of the wandering cells arising from the inflammation some die, and probably furnish nutritive material for proliferating cells; others increase in size by taking up into their interior the *detritus* of the dead

tissue and extravasated blood, while a small number of the wandering cells enlarge, gain vesicular nuclei, and probably take part in the formation of connective tissue and of vessels. The germinal tissue, however, from which the periosteal callus is derived, is formed by proliferation from the cells of the periosteum. The multiplication of nuclei takes place by karyokinesis, and the figures agree with those described in other animal cells by Flemming. A similar proliferation of the endothelial cells of the vessels takes place, and furnishes material for the formation of new blood-vessels. This regenerative growth in the periosteum and vessels begins only 20–30 hours after the occurrence of the fracture, and is consequently not (like the inflammation) immediately caused by the injury, but by the altered vital conditions of the periosteum, whose exact nature cannot be further defined. The cellular germinal tissue which then arises forms osteoid, chondroid, and cartilaginous tissues. The ground substance of all these tissues is to be considered as a product of the protoplasm of the formative cells. It is present in the germinal tissue, and, besides increasing in quantity, undergoes different modifications, as this changes into osteoid, chondroid, or cartilaginous tissue. The hyaline cartilage which is formed increases in bulk by division of its cells. This paper is illustrated by two folded plates containing 22 well-executed figures.

The third paper, "A Contribution to the Knowledge of the Biology of Mucor corymbifer," is by Armand Hückel. Lichtheim has recently found that this fungus possesses pathogenic properties, and that its spores germinate in the tissues of an animal into whose blood they have been injected. Hückel cultivated a fungus which was found growing in the external auditory meatus, and showed that it was really Mucor corymbifer. An emulsion of the spores was injected into the jugular vein of rabbits. If the injection was large the animal died in a couple of days, and the spores were found to have germinated in different parts of the body, chiefly in the kidneys, the lymphatic follicles of the intestine, and in the mesenteric glands. The process of germination was followed in animals who were killed at varying periods after the injection. For these details, as well as for a description of the alterations caused by the fungus in the tissues, we must refer to the original paper, confining ourselves to saying that in the kidney acute glomerulo-nephritis, with patches of interstitial inflammation tending to suppuration, were the chief lesions, while the epithelial

cells presented much less alteration. Dogs were unaffected by injection of the fungus spores.

The last paper is an instalment of a work on the "Mode of Origin of Hæmorrhagic Infarction," by Dr. J. Mögling. It consists of a very complete historical sketch of the various opinions which have been held on this subject from the time of Laennec to the present day. We hope, at some future period, to have an opportunity of learning the results of Dr. Mögling's own researches on this still obscure subject.

From the short account we have given of the contents of this volume some idea can be gained of their variety and interest. The papers, one and all, claim the interest and attention of all pathologists.

Practical Anatomy and Manual of Dissections. By CHRISTOPHER HEATH, F.R.C.S.; Holme Professor of Clinical Surgery in the University College, London, and Surgeon to the University College Hospital; Member of the Council and Court of Examiners, Royal College of Surgeons, England; Fellow of King's College. Sixth Edition. Revised by RICKMAN J. GODLEE, M.S. Lond., F.R.C.S.; Demonstrator of Anatomy in the University College, London, and Assistant-Surgeon to the University College Hospital. London: J. & A. Churchill. 1885. Pp. 540.

IT is with much pleasure we perused the sixth edition of Mr. Heath's well-known dissecting Manual, which, under the able revision of Mr. Godlee, is certain to retain the high reputation, amongst students, enjoyed by the former editions. We are glad to perceive that there is very little increase in the size of the work, for this is frequently an objection to the later editions of works designed for the practical use of the student, which are thus rendered too bulky for convenient use in the dissecting room. The Manual also possesses a great essential in works of the kind—namely, the statement in a clear and concise manner of just what is required by the student, avoiding the introduction of matter more fittingly reserved for the standard anatomical works.

The author is to be congratulated on the manner in which he elucidates subjects usually found by the student to be of a particularly difficult nature, thus proving himself to be a practical teacher of large experience.

The woodcuts throughout the work are of a most useful kind, and are very well executed. Those introduced for the first time into this edition will be found of great value to the practical worker.

We can thoroughly recommend this book to the student; it certainly deserves one of the highest places amongst the many excellent guides at present in circulation.

The Student's Botany. For the Royal University Course. By E. MacDowel Cosgrave, M.D. Dublin: Fannin & Co. 1885. 8vo, pp. 94.

This is an admirable little work, and will completely fulfil the purpose for which it has been written—the preparation of students for the botanical examinations of the Royal University. The first part runs to 41 pages, and is an encyclopædic glossary of botanical terms. Part II. is a brief explanation of the general principles of the classifications of the vegetable kingdom; but Part III. is a concise but clear description of the twenty-two natural orders in which the "Royal" students are examined. This portion of the work is admirably done. The characteristics of the orders are well explained, and the pharmacopœial and other products derived from these orders are given. Part IV. contains all the botanical examination papers of the Royal University since its commencement; and the student and his teacher can thus make themselves acquainted with the scope and style of the botanical examinations of this licensing body. An appendix contains a list of the natural orders and classes recommended for special study in Trinity College, Dublin. Dr. Cosgrave's manual is admirably printed and got up, and the price is nominal.

The Elements of Pathology. By Edward Rindfleisch, M.D. Translated from the first German Edition by W. H. Mercur, M.D. Revised by James Tyson, M.D. London: Kimpton. 1885. Pp. 263.

This little book is intended "simply to establish the natural groundwork which must exist in Pathology as well as in every natural science, and to place it in as clear a light as possible." As is to be expected in any work of Professor Rindfleisch, it abounds in information, and shows on the part of the author the most thorough grasp of his subject. It is, however, in many parts very speculative,

and we cannot agree with Dr. Tyson, that it "will fill a niche in the wants of the student," although for those who already possess some knowledge of general pathology, it will furnish interesting and profitable reading. We question if it will ever equal in popularity the Manual of Pathological Histology by the same author.

A System of Human Anatomy; including its Medical and Surgical Relations. By HARRISON ALLEN, M.D.; Professor of Physiology in the University of Pennsylvania, &c. Section VI.—Organs of Sense, Organs of Digestion, and Genito-Urinary Organs. Philadelphia: Henry C. Lea, Son, & Co. London: Henry Kimpton. 1883. Pp. 585 to 782.

THIS, the last section of Dr. Allen's large work of reference, maintains fully the character of the former sections, and thus completes a work essentially American in its nature; at least, it is not common amongst European works to include in an anatomical work the physiological, surgical, and medical relations of the part under consideration. It may, however, serve the purpose with which the author declares it to be written—that is, to supply the general practitioner with the anatomical details of the part to which he has his attention called in his medical or surgical practice, in a concise manner. The author must certainly be congratulated on the clear and concise manner in which, as a rule, his anatomical facts are placed before his readers, while not going too deeply into details which could hardly be appreciated by those for whom the work is written. On this point we object, however, to the multiplicity of names which are given to parts as tending rather to puzzle the student than to elucidate the subject. The footnotes, pointing out whence certain statements have been taken, are to be highly commended, and from their comprehensive nature show the careful and painstaking manner in which the work has been compiled.

The work is illustrated by a series of plates and woodcuts, which are of a very high class, and executed in an artistic manner. The drawings are by Hermann Faber, from dissections by the author; a great number are original in design and of a very interesting nature, particularly those of the orbit and abdomen in the hepatic region.

In the section on the eye the manner in which the capsule of

Tenon is described compares very favourably with the account of it given by most British works. We would, however, call attention to the description of the Eustachian tube and trachea, as pointing out how discrepancies are to be found in the first edition of most works.

The objectionable points are at page 607. The author having stated that the Eustachian tube is 18 to 20 lines in length, then proceeds to say that the osseous portion is 14 lines in length, and represents one-fourth to one-third the entire length of the tube. In the description of the relations of the trachea, the arteria innominata is given as an anterior relation in the upper or cervical stage.

The table, after L. Mayer, showing the result of various penetrating wounds in the hepatic region, is very instructive and interesting, as is also the section on malformations. The work concludes with a useful section on the method of performing *post mortem* examinations.

Although this work contains such a great amount of valuable information, and is undoubtedly one of the best American books we have read, still we do not think it will command an extensive sale in this country, from the multiplicity of its contents and the numerous novel terms in anatomy which are met with in its pages.

Selections from the Clinical Works of Dr. Duchenne (de Boulogne). Translated, Edited, and Condensed by G. V. Poore, M.D. (Lond.), F.R.C.P. The New Sydenham Society. 1883.

Dr. Poore was commissioned by the authorities of the New Sydenham Society to edit a selection of Dr. Duchenne's clinical writings, to be comprised within a single volume of moderate dimensions. As Duchenne was an extremely prolix writer, Dr. Poore felt himself obliged to omit much and to compress a great deal in order to put the English reader in possession, if possible, of all the clinical facts which we owe to Duchenne. Editorial notes are appended to some of the chapters, bringing up the information to a more recent date, and the result is a somewhat curious mixture of old and new matter, emanating from different minds and couched in different styles of language. The greater part of the text is derived from the last edition of Duchenne's *magnum opus*, "L'Electrisation Localisée," and from the editor's point of view, it may be said that he has carried out his task of pruning and condensation

with judgment and ability. Most of Duchenne's investigations are well known to the educated physician, but those who have not yet familiarised themselves with the voluminous writings of Duchenne in his own language will find in the volume edited by Dr. Poore an excellent abridgment, which will give them a fair insight into the deep mine of clinical experience in which the great French neurologist worked so long and so honourably.

Syllabus of a Course of Lectures on Physiology, delivered at Guy's Hospital. By P. H. PYE-SMITH, B.A., M.D., F.R.C.P. With Diagrams and an Appendix of Notes and Tables. London: Churchill. 1885. Pp. 110.

IN his preface the author says:—

"In following the example of the late Dr. Alfred Swayne Taylor—one of the best lecturers I ever heard—at Guy's, and of Dr. Burdon-Saunderson at University College, I have endeavoured to make the Syllabus useful to students, as a help in their systematic reading and self-examination; and also to those who have passed the earlier stages of studentship, in recalling the more important outlines of the 'Institutes of Medicine.' I have also, I trust successfully, endeavoured to make it useless to anyone who may try, 'for the purpose of examination,' to substitute hasty and ill-digested reading for slowly and practically acquired knowledge."

Anyone who looks over the pages of this little book will see how well these designs have been carried out. A little more than half the volume is occupied with the syllabus of lectures, the remainder with the appendix of notes and tables. In the syllabus there is nothing more than the bare heads under which the subject is divided. Thus, on p. 30 we read, "Renewal of air in lungs—Pneumatic laws involved (note 20.) Thorax impermeable, resistant, and elastic. Expanded in all three directions by muscular effort: inspiration. Diaphragm. Movement of sternum and of ribs. Contraction by elasticity and by muscular effort: expiration. Action of intercostal muscles. Intra-thoracic pressure. Donders' model."

We fancy a student cramming for an examination could not make much of this.

In the Appendix are 41 sections, giving in more or less tabular form information on various points in anatomy, physiology, and embryology. These are for the most part admirably arranged, and

give in the smallest compass a vast amount of information. The work is, however, not one from which details are to be learned, but is intended to systematise and direct study, and to suggest lines of thought.

Sixteen diagrams are given. These are of the simplest kind, so that they may be easily copied by students; but they are perfectly intelligible, and fully sufficient for what they are intended to teach.

Dr. Pye-Smith's remarks on the value of models, however rough, to illustrate structural details, will meet with the approval of every teacher. We feel sure, too, that his plan of introducing a personal interest into his lectures, by showing the portraits of men eminent among physiologists, and reading extracts from their works, is a good one. The last section of the Appendix consists of a long list of important names and dates in the history of physiology. To the better class of students this book is to be much commended, and there are few teachers who will not be able to glean from its pages some useful hints and suggestions.

Du Cancer Précoce de l'Estomac. Par le Dr. Marc Mathieu. Paris: J. B. Baillière et Fils. Pp. 148.

This treatise is on the subject of cancer of the stomach in persons under thirty years of age. The author has collected twenty-nine cases of this nature, verified by autopsy. He draws attention to some of the clinical features which he considers peculiar to the disease under these circumstances.

Ueber Sklerose des Rückenmarkes, einschliesslich der Tabes dorsalis und anderer Rückenmarkskrankheiten. Von Julius Althaus. Leipzig: Otto Wiegand. 1884. Pp. 226.

This is a German translation of Dr. Althaus' recent work on Sclerosis of the Spinal Cord, which was favourably noticed in the number of the *Dublin Journal of Medical Science* for December last. It has been somewhat altered and condensed by Dr. Möbius so as to suit the taste of German readers.

Of the angry and personal discussions which have arisen from some parts of the original work we have no desire to speak. The so-called theory of locomotor ataxy proposed by the author, although, probably, as good as any of the other theories of this condition, is,

we think, the least valuable part of his work, the real usefulness of which consists in bringing together, from scattered sources, all that is certainly known of an important and obscure class of diseases.

Practical Pathology: a Manual for Students and Practitioners. By G. SIMS WOODHEAD, M.D., &c. Second Edition. Edinburgh: Young J. Pentland. 1885. Pp. 534.

THE first edition of this work met with such success that, within a year of its appearance, a new edition was called for. This has been revised throughout, in part re-written, and contains some new matter.

The book is one which differs from all other English works with which we are acquainted, as it is not merely a manual of pathological anatomy, but a comprehensive treatise on pathological methods as well, thus fully justifying its title of practical. It resembles, in its scope, the justly esteemed *Compendium der pathologisch-anatomischen Diagnostik* of Professor Orth; and while the descriptions of appearances and methods as given by the German author are, in our opinion, preferable to those given in the work before us, the manual of Dr. Woodhead has much which will make it more popular, and to general readers more useful, than the Compendium could be. The latter work contains no drawings of any kind, while Dr. Woodhead's pages are illustrated with one hundred and sixty-two coloured figures, representing, for the most part, microscopic appearances with extreme beauty and faithfulness. It is, in fact, a very valuable atlas of pathological histology, and will be found of inestimable service by those who are studying pathological anatomy by themselves, or by those who have not access to actual microscopic preparations.

The work opens with a chapter on the methods to be followed in the performance of a *post mortem* examination. Here the author, in common with all other pathologists, adheres closely to the rules laid down by Virchow.

The second chapter, which runs to sixty pages, is on the preparation of tissues for microscopic examination, and forms a very comprehensive treatise on pathological histology. The methods of cutting, staining, injecting, and mounting of morbid tissues are described with all needful fulness and clearness, and practical workers will find here, within a short compass, all the directions they can require for the carrying on of their investigations.

The remainder of the volume is occupied with the descriptions of the pathological conditions of the different organs. The subjects usually included under general pathology, such as inflammation, the different kinds of degenerations, and the pathological changes in the circulation of the blood and lymph, are not considered separately from the special pathology of each organ; and the chapter on tumours and those on animal and vegetable parasites are placed at the end of the book, instead of at the beginning, as is usually the case.

The text is clearly and well written, and, although it does not contain much which is very original, it gives an accurate and intelligible description of all the subjects dealt with.

On the whole, we would most strongly recommend this book to all those who take an interest in pathological anatomy. As regards beauty of illustration and fulness of practical directions, it has, we believe, no equal in English literature. The paper, type, and binding are all that could satisfy the most fastidious, and it has the great practical advantages of good indices and cut edges.

Eighth Annual Report of St. Patrick's Home for Nurses to the Sick Poor. Dublin: Charles W. Gibbs. 1885. Pp. 22.

The object of this Institution is to supply trained nurses to visit the sick poor of the city of Dublin and its neighbourhood at their own homes. The "Home" is conducted in accordance with the principles of the Church of Ireland, but its nurses are forbidden to use their position, as attendants on the sick, for the purpose of inducing the members of any denomination to leave the communion to which they belong. Epidemic diseases and other cases of sickness which should more properly be treated within the wards of a hospital are not nursed by the "Home." The nurses are to discharge their duties under proper medical supervision without fee or reward from the patients entrusted to their care.

During the past year 456 separate patients were nursed, and 5,860 nursing visits were paid. The following cases are appended to the Report for the purpose of showing the type of work done by the nurses:—

"Case I.—Mrs. H.—A case of enteric fever. This patient had previously nursed her husband through the same illness without any medical advice, and her friends continued a similar treatment with her for some time before calling in a doctor. When first visited, nurse found patient

quite delirious, being allowed by her friends to get out of bed, and 'have anything she fancied.' The room was in the greatest disorder, and all available garments and articles of furniture were pawned, as her husband had been drinking constantly since her illness. Nurse went twice daily to attend to the patient, and to carry out the doctor's instructions. We lent everything that was necessary; supplied her with milk and beef-tea; instructed her friends how to nurse her during our absence; and had the satisfaction, in a few weeks, of seeing her quite convalescent, and her husband a total abstainer.

"CASE II.—Mrs. D.—Ulcer of leg. This patient was found in a most deplorable condition from starvation and neglect. Her husband, being paralysed, was unable to work, and a little girl of ten years old was the only person who looked after them. Nurse dressed the wounds, and bandaged the leg when necessary. The comfort and relief afforded by having this properly done, and by the nourishment supplied from the Home, can easily be imagined. She got much stronger, and began to take an interest in her home. It is now one of the cleanest and neatest rooms in our district, and the patient blesses the day our nurse entered her doors.

"CASE III.—P. G. (a boy nine years old)—Enteric fever, bedsores. This patient, when visited by the nurse, was found delirious, and in a wretched state of neglect, having only a very scanty covering. The father having been out of work for some months, everything was pawned. The Home provided the sick child with a water pillow, linen, and plenty of nourishment—beef-tea and milk. The nurse went daily for some weeks, attended to the comfort of the patient, and carried out the doctor's instructions. She also encouraged the mother to keep the room clean and tidy, and take pride in her personal cleanliness, and that of her four children. The little convalescent was strong enough to come with his mother to the Home, and help her in carrying back some Christmas gifts."

These cases speak for themselves. An Institution which does such work should not lack sympathy and support from those who have the welfare of the poor—and particularly the *sick* poor—at heart.

Disorders mistaken for Hydrophobia. By CHAS. W. DULLES, M.D.

THIS reprint from the *Transactions of the Medical Society of the State of Pennsylvania* is more readable than some of the author's other communications on the subject. He is one of those who are sceptical as to the entity of such a disease as hydrophobia at all.

PART III.

HALF-YEARLY REPORTS.

REPORT ON FORENSIC MEDICINE.

By H. C. Tweedy, M.D., Dubl.; M.K.Q.C.P.; Diplomate in State Medicine, Trin. Coll. Dubl.; Fellow and Examiner Royal College of Surgeons; Physician to Steevens' Hospital.

1. Causes of Error in Investigating Cases of Criminal Assault.
2. Hegar on an Early Sign of Pregnancy.
3. Diagnostic Value of Fœtal Heart-beats.
4. Length of Large Intestine as a Guide to Age of Fœtus.
5. Meconium in its Forensic Aspects.
6. Pistol-shot without External Wound.
7. Death resulting from Electricity.

I. CAUSES OF ERROR IN THE INVESTIGATION OF CASES OF CRIMINAL ASSAULT.

M. Brouardel, in an exhaustive paper read before the Société de Méd. Légale, dwells on a variety of questions connected with this subject. The following is a brief outline of Mr. Arthur Cooper's able summary :—

Supposing a child to be the subject of examination, the doctor has to guard against two causes of error—first, the anxiety of the mother, who is convinced that her child has been assaulted; and, second, the falsehoods of the child herself, who has forged a story of which the main points have been suggested to her. In such cases a medical man should be careful to frame his certificate on the results of careful personal inspection.

With regard to the necessary examination of the hymen, M. Brouardel has in view more particularly children under ten years of age—the period during which the difficulties are greatest. In the first place, a medical man ought only to certify as to the state of the hymen when he possesses real experience *de visu*. In illustration of this a case is related in which a young French practitioner certified that the hymen of a child had completely

disappeared, whereas, on a second examination in conjunction with M. Brouardel, the membrane was found to be intact. The practitioner's excuse to the judge was that he had never before seen a hymen, and that if he sought information on young girls he would himself be committing an offence against the law. From this M. Brouardel draws the wise conclusion, "Never certify to anything about which you are not sure."

The hymen varies in position according to the age and *embonpoint* of the child. In well-nourished children under two or three years old, the hymen is deeply placed, owing to the deposit of fat in the labia majora, which sometimes forms a layer seven centimetres in thickness. In such cases considerable perseverance and gentleness in the examination are necessary for the hymen to be seen at all; and these are the cases in which medical men sometimes certify that the hymen has disappeared. On the other hand, in thin, ill-nourished children, the labia majora hardly exist, and the hymen is easily seen at barely a centimetre from the surface. The form of the hymen is very variable at different ages. In newly-born infants it is nearly always labial in form, but there are numerous variations. For example, there may be two or more folds in the segments of the membrane, in which case the orifice is, of course, proportionably dilatable; and, in such cases, absence of rupture in girls from twelve to fifteen years old, would not prove that coitus had not been completed. Such natural reduplications or folds in the hymen are often mistaken for old rents. The hymen appears to become crescentic only at five or six years of age, and this appearance is probably due to a further development of the earlier (labial) form. When it is well-marked and the orifice is narrow, there can be no mistake; but sometimes the branches of the crescent undergo partial arrest of development, giving rise to a notched appearance of the margin. The integrity of the free border, on careful examination, shows to the experienced eye the distinction between such natural notches and the effects of injury to the hymen. In a third form of hymen there are two symmetrical orifices, one on each side of a median bridle which stretches across from the anterior to the posterior wall of the vagina. Most frequently the middle of the bridle is found to have disappeared, and only one or two projections or *languettes* remain, separated from the rest of the hymen by two deep notches.

Two other causes of error are also mentioned. In one case a chancre had eroded the edges of a torn hymen, which afterwards

partially united, leaving a double opening. In another case a medical man found a hymen torn four days after violation. A second medical man, who saw the patient eleven days later, said the hymen was entire, the reason being that the two edges of the wound had united by that time, and the cicatrix being then red had escaped notice, for, at another examination by both medical men together, thirty-five days after violation, the cicatrix had become white and clearly distinguishable.

In examining the hymen, it must be remembered that, if the thighs be widely separated, the membrane is put on the stretch. It is sometimes necessary to make the child cough or bear down in order to obtain a satisfactory view of the parts, and the utmost gentleness must always be used. To make sure that the membrane is intact, the finger or a blunt probe should be passed behind it to smooth out the margin. It is only in this way that the difference between natural folds and cicatrices can be properly made out.

With regard to the question of vulvitis, it should be borne in mind that inflammation of the vulva may be spontaneous, traumatic, or gonorrhœal. There is no certain means of diagnosticating one from the other. Urethritis, especially if of long duration, is a valuable indication of contagion, but it is not conclusive; for Casper and Simon, as well as the author, have seen urethritis follow injury. In such cases, however, the urethritis will generally have subsided by the time the more acute state of a spontaneous or traumatic vulvitis has been reached. Gonorrhœal urethritis, as a rule, lasts much longer. The most valuable signs are the course and duration of the vulvitus. The traumatic variety reaches its maximum in from thirteen to fifteen days, and disappears in a fortnight or three weeks in healthy children. In M. Brouardel's opinion gonorrhœal vulvitis lasts very much longer, especially in neglected children. Spontaneous vulvitis is very common in children of lymphatic temperament, particularly during teething and at the beginning of menstruation. It may be acute or chronic and is contagious or epidemic, especially in hospitals. Swelling of the inguinal and vulvo-vaginal glands is most frequent with gonorrhœal vulvitis, but may occur in the other forms.

When consulted in medico-legal cases of this kind, medical men are generally in too great a hurry to give a decided opinion, from fear of being thought ignorant or inexperienced. A decided opinion should never be given from a single examination. In most

cases the diagnosis can be made only after several visits, and by following carefully the course of the malady—*e.g.*, severe bruising of the parts may only appear several days after the violence which gave rise to it, and the first examination may have been made too early for the appearance of ecchymoses, of gonorrhœa, or of venereal sores. In illustration of the occasional grave complications of gonorrhœa in girls, a fatal case (in a patient aged fifteen) is related, in which embolism of the pulmonary artery followed thrombosis of the left iliac vein in connexion with purulent vaginitis and metritis. In considering the various forms of ulcers of the vulva, M. Brouardel quotes largely from Fournier's lectures on "*Syphilis chez la Femme*," especially with regard to the occasional difficulty in diagnosis between herpes and chancres. He also quotes from Parrot's lectures respecting aphthous vulvitis in children. Several interesting medico-legal cases are related in which the author was associated with M. Fournier, and in which there was great difficulty in the diagnosis. Here again the author cautions the medical man against forming a hasty opinion. A chancre should never be diagnosticated from the chancre alone. The great point is to watch and see what follows.

II. HEGAR ON A NEW METHOD OF DIAGNOSTICATING PREGNANCY WITH CERTAINTY DURING THE EARLY MONTHS.

In the *Annales de Gynécologie*, September, 1884, Professor Hegar describes a peculiar softness, a certain subtileness, and a thinning of the lower segment of the uterus—*i.e.*, of the part of the uterus which is immediately above the insertion of the several uterine ligaments. This condition can be easily verified, not only when the uterus is resistant, as is usual, but still more so when it is elastic and soft. Even in these cases it is possible, by depressing the lower portion of the uterus, to distinguish it from the superior portions and from the rigid cervix. The softness of this part is such that one might imagine that the cervix was simply in contact with a pelvic or abdominal tumour. We do not know what pathological condition of the womb can present such symptoms. The cause of this remarkable sign exists in the fact that the inferior segment of the uterus becomes during pregnancy the finest part, the softest, and the most elastic. It thence results that, in practising the rectal touch with abdominal palpation, it is possible to feel between the fingers this portion of the uterus with the characters it presents.

III. BOLZONI ON THE DIAGNOSTIC VALUE OF THE FŒTAL HEART-BEATS.

Dr. D'Arcy Adams draws attention to a careful record, kept by Dr. Bolzoni, of the fœtal heart-beats in all cases admitted to the obstetric clinic of the University of Padua for the scholastic year 1883–84. Of these he selected 100 women between the eighth and ninth solar month of gestation, and in whom delivery was normal. The heart-beats were counted in each three times, always at the same hour, and the mean taken. On the birth of the child, its sex, weight, length, and bi-parietal diameter were entered in the register and compared with the previously determined heart-beats. He finds that the number of heart-beats is not in relation to the sex of the child, but in constant and proportional relation with the weight, length, and bi-parietal diameter, that is to say, with the mass of the body. The smaller number of heart-beats more frequently corresponds to the male sex, only because boys are as a rule heavier at birth than girls. The lowest rate observed was 112, and the highest 168. The first was in a boy of 4,300 grammes weight, 51 centimetres long, with a bi-parietal diameter of 10·5 centimetres. The second was in a girl of 2,570 grammes weight, 46 centimetres long, bi-parietal diameter 9·5. The two most frequent rates were 128 and 144. With the first more boys than girls corresponded, and with the second more girls. With 128 heart-beats the weight of the child (of whatever sex) was over 2,900 grammes. With 144 the weight was always less than this. The number of heart-beats, then, is a more constant guide to the development than to the sex of the child.

IV. LENGTH OF THE LARGE INTESTINE AS A GUIDE TO THE AGE OF THE FŒTUS.

Dr. Huggard (*Medical Record*, December, 1884) notices some recent researches on this subject. From an examination of 81 fœtuses varying from the third to the ninth month, Dr. Severi regards the length of the large intestine as an important clue to the age. While the small intestine does not bear any constant relation to the length of the body, the large intestine is found to vary pretty definitely according to the length of the fœtus at different ages. Thus from the third to the sixth month the great intestine is shorter than the fœtus; in the seventh month they are equal in length, and in the eighth and ninth months the large

intestine is longer than the fœtus. After the first two years of extra uterine life, during which the superior length of the great intestine is maintained, the disparity becomes gradually less, and the time arrives when equality is again reached. As the intestine varies in length according as it is distended or not, it is necessary to proceed on a uniform plan. Dr. Severi partially distends it on a table after its removal from the body, and then cuts it into pieces about 45 or 50 centimetres in length. This facilitates the measurement.

V. MECONIUM IN ITS FORENSIC ASPECTS.

Dr. J. Ch. Huber (*Friedreich's Blätter für gerichtl. Med.*, 1884, p. 24, 142) observes that the most important substance found in meconium is that greenish-yellow body which more especially determines the colour of the dark greenish-black masses, These bodies, which Tardieu admirably depicts in his "*Étude sur l'Infanticide*," are mostly of oblong, elliptical, oval, or roundish contour, and are not infrequently flaky, with rounded angles. In size they range from that of a microcyte (and less) to that of a squamous epithelial cell from the tongue. As these bodies, which appear to be altogether homogeneous in structure, are enveloped in mucus, it is very difficult to ascertain how they behave towards chemical reagents, which penetrate them slowly. They are unaltered by acetic acid and by ether, but dissolve in solution of potash. The bile-pigment reaction has been obtained from them by good observers. It is more difficult to decide what is their basis (albumin or keratin?)—whence they arise. Taking into consideration the abundant shedding of epithelium in the small intestine of the fœtus, Huber cannot avoid the conclusion that we have here to do with intestinal epithelial cells which have become swollen, confluent, and disintegrated. On account of their frequently characteristic form, and the ready possibility of their detection in dried meconium stains, he holds these bodies to be of great importance, and at any rate as much more characteristic, than those amniotic elements which have been swallowed.

VI. PISTOL SHOT WITHOUT EXTERNAL WOUND.

Dr. F. Ogston (*Edin. Med. Jour.*, 1884) relates an instructive case of death from a suicidal pistol shot, in which there was no external wound. The bullet penetrated the velum palati, passed through the basilar process of the occipital bone, traversed the

medulla oblongata, and, striking the internal occipital protuberance, passed forwards and upwards through the brain, till it reached the frontal bone; it then sank backwards over the surface of the brain, and was found over the fissure of Silvius, near the superior longitudinal sinus.

VII. DEATH RESULTING FROM ELECTRICITY.

Dr. E. Grange (*Ann. d'Hygiène*, 1885, Tome XIII., p. 53) discusses the accidents resulting from the industrial applications of electricity and the means of their prevention, and gives details of the necropsies on the bodies of two young men who were killed in Paris in 1882 by coming into contact with the conductors from a Siemens' machine, with alternate currents, working twelve lamps, with a difference of potential of 500 volts between the two wires, or a difference of potential probably of 250 volts between the one wire and the air or earth. The first body was that of a man twenty-nine years of age. The examination was made in August, sixty-two hours after death, the body having been kept in a refrigerating chamber. Putrefaction had not commenced. *Rigor mortis* was pronounced. The shoulders and upper part of the body exhibited a rosy tint like that seen in asphyxia by charcoal fumes, and also a number of minute punctated ecchymoses, chiefly on both sides of the thorax and the upper arm. On the face and neck was an irregular, sinuous, slate-gray furrow, ten inches in length and about an inch in width, extending from near the left ala of the nose downwards and backwards over the angle of the jaw, with a double border of white and red zigzag lines. There was no swelling or effusion about the furrow. A little higher up was a second, smaller and narrower, furrow, five inches long, and coloured similarly to the other, but without the red and white borders. On the left hand, at the point of articulation of the metacarpus with the first phalanx of the little finger, was a small gray erosion, and there was a similar erosion on the middle of the palmar surface of the first phalanx of the ring finger. These erosions were formed by an elevation of the epidermis, which was gray and easily detached. At the back of the right elbow and also on the root of the nose were small parchmented spots. Under the hairy scalp over the left temporal protuberance were also some ecchymoses. There was no fracture of the cranium. The brain was not congested, but the surface of the convolutions was soft and adherent to the meninges, so that the brain could not be

exposed without removing an appreciable quantity of cerebral substance. The lungs were congested and crepitant. The heart was filled with bright, vermilion-coloured blood, readily acquiring a venous hue with reducing agents. The pericardium exhibited some minute ecchymoses. The aorta was filled with liquid blood.

From these data the author drew the conclusion that death was the result of an electric discharge giving rise to convulsions, due to lesion of the medulla oblongata.

The other victim was a muscular man, whose age is not stated. The face was pallid, and the ears greatly congested and marbled with black spots, which were also disseminated over the whole body. These were not *post mortem* lividities. Well marked *rigor mortis* persisted till thirty hours after death. There was no solution of the continuity of the skin, and the only other superficial lesions noted were five traces of burning on the left hand and six on the right hand, differently disposed. These marks were white and dry and did not extend beyond the dermis. Internally, the lungs were gorged with dark blood, which became red on exposure to the air. The heart was quite empty of blood. The right ventricle was flaccid; the left remarkably firm, as if the organ had ceased to beat while in a state of systole. There were no clots in either pulmonary artery or aorta. The periphery of the brain was much congested, and a large quantity of blood escaped on opening the sinuses. The pia mater was hyperæmic. There was no extravasation of blood, and the ventricles were empty.

It was concluded in this case that death resulted from arrest of the heart's action, due to violent excitation of the pneumogastric nerve.

Taken in connexion with the above may be mentioned the recent case of death from electricity in the Health Exhibition, in which the most distinct evidences of external injury were discovered, but which has acquired a remarkable significance from the important investigations which have been made by Drs. Shields and Delépine in connexion with the case.

On the outer aspect of the left index finger of the deceased was found a small elongated blister, about half an inch in length, which had the appearance of a burn, but there was no congestion of the skin around it nor any smell of charred epidermis. Drs. Shields and Delépine describe with great care and minuteness the appearance of the structures around and included in this blister, and state that they have succeeded in discovering very definite changes

in the skin involved in the blister, which changes they believe to be pathognomonic of electrical vesication. The cells and their nuclei in all the layers of the epidermis were found to have undergone great modifications from their normal type; even the rough stratum corneum—the most superficial part of the cuticle, exhibited signs of change. Its dry horny cells were seen in the middle of the blister to be condensed and fused together, forming a homogeneous, waxy mass. The next layer or stratum lucidum was conspicuous at the margin of the blister, and still more distinct within the limits of the blister, excepting in the actually central portion, where it could not be distinctly recognised from the stratum corneum. The next layer of the epidermis, which consists of flattened scales and granules of a nature intermediate between protoplasm and keratin around their nuclei, and is termed the stratum granulosum, was found to be much altered, and fused with the rete Malpighii or stratum mucosum, towards the centre of the blister. In the rete itself the changes were marked, and are described with minuteness. There were distinct morbid appearances in and around the nuclei, and a remarkable fibrillation of protoplasm. In the cutis vera or corium, the papillæ were abnormally flattened, and a complete fusion of the delicate fibres abundant in the true skin had taken place in the middle of the blister, producing a homogeneous appearance. The epithelioid cells of the capillaries had contracted, so that there were a number of openings or fissures between the individual cells, which, it must be remembered, form the only true wall of these minute vessels. Some of the cells in the coiled part of the sweat glands exhibited considerable deviation from their natural appearance. The changes in the nerves were not considered, according to Drs. Shields and Delépine, to be either very distinct or highly characteristic. They dwell, on the other hand, upon the abnormal clearness and distinctness of the tactile or Meissner's corpuscles. The morbid distinctness of the corpuscles may be due to some severe but unknown injury to their substance, produced by the electric current—an injury which, at the very moment of its infliction, may transmit a profound or even deadly impression to the great centres along the nerves in connexion with the corpuscles.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ACADEMY OF MEDICINE IN IRELAND.

President—J. T. Banks, M.D.
General Secretary—W. Thomson, M.D.

SURGICAL SECTION.

President—E. H. Bennett, M.D., President and Fellow of the Royal College of Surgeons, Ireland.
Sectional Secretary—William Stokes, F.R.C.S.I.

Friday, January 23, 1885.

The President in the Chair.

Astragaloid Osteotomy in the Treatment of Flat-Foot.

Professor Stokes commenced by drawing attention to the usually accepted theories as regards the ætiology of flat-foot—viz., ligamentous relaxation, and a paralytic condition of certain muscles connected with the ankle and foot. He adduced various arguments to disprove these views. Attention was drawn to Professor Ogston's researches in this direction, and an account given of the operation he has devised for the cure of the deformity in question; and objections to it were taken, based on the operation being complicated and difficult, and followed necessarily by an obliteration of the medio-tarsal joint. Mr. Stokes believed that the defect causing flat-foot is due, primarily, to alteration in the tarsal bones, notably the astragalus, which change in it may be either congenital or the result of disease, probably rickets, and that this stretched, rather than relaxed, condition of the ligaments is a secondary rather than a primary change. In illustration of this view he demonstrated a specimen of the deformity taken from the Museum of Trinity College, and for which he was indebted to Professor Bennett. Having regard to the fact that in the irreducible cases of flat-foot osseous deformation is the chief factor, Professor Stokes believed that the rational

treatment for such cases should be to deal exclusively with the deformed astragalus, and to do so without necessarily obliterating Chopart's joint. This he did in the case of a youth aged fourteen, and with complete success. The parts to be operated on were rendered perfectly aseptic, and an incision an inch and a half in length along the inner edge of the foot made, the centre of which incision was the prominence caused by the head of the astragalus. At the centre of the incision another was made at right angles to it, and a little behind the situation of Chopart's joint, and the two triangular flaps of skin dissected back for about half an inch. A wedge-shaped piece of bone from the enlarged head and neck of the astragalus was then removed with an osteotome, and it was found then that by adducting and supinating the foot the arch was perfectly restored. The wound during its union was aseptic throughout, and the patient afebrile. The method Professor Stokes adopted for keeping the foot in a position of adduction was by the application of a Dupuytren's splint applied as in a case of Pott's fracture of the fibula. The result of the operation was most satisfactory, and casts of the foot, taken before and after the operation, were exhibited.

Ogston's Operation for Flat-Foot.

Mr. Kendal Franks gave the details of a case on which he operated by this method on the 16th of October last. The paper was illustrated by two impressions, taken in charcoal, of the foot, before and after operation. The first impression showed the foot resting on the length and breadth of the sole; a remarkable prominence on the inside, corresponding to the astragalo-scaphoid articulation, showed where this joint rested on the ground. The second impression showed that the arch of the foot had been restored, so that when the sole of the patient's foot was blackened with charcoal, and she was placed standing on a moistened sheet of paper, the paper received an impression only of the heel, the outer side, and the anterior portion of the foot. The operation wound was perfectly healed on the sixth day, and the highest temperature recorded was 99·2°. Mr. Franks contrasted this method with Mr. Stokes's method of astragaloid osteotomy, and argued that, as the latter method only rectified the deformity without dealing with its cause, it offered no security that in process of time the arch would not re-descend. He considered that the primary cause was a relaxation of the ligaments, but that the immediate cause of the deformity was a yielding of the astragalo-scaphoid joint, so that it gaped below, as maintained by Ogston; hence, the only method hitherto devised which promised to be permanently successful was that which dealt with the joint, and which, by procuring bony ankylosis between the astragalus and scaphoid, would render any future yielding of the joint impossible.

Friday, February 20th.

Adjourned Discussion on the Operation for Flat-Foot.

Mr. Corley said, in order to explain his objections to the theories embodied in Mr. Stokes's paper and in that of Mr. Kendal Franks, it would be necessary to refer to the mechanism intended for the support of the body at the ankle and chief tarsal joints. When the weight of the limb or body is thrown on the foot it practically rests on a triangle—the heel, the ball of the great, and that of the little toe—the centre of gravity being more towards the inner side of this triangle. There is a well-marked arch to support it, with accessory structures, including tendons and ligaments, which are much stronger than on the outer side. That the muscles—the tibiales—are stronger than on the outer side is plainly shown by the attitude of the foot in the infant before he has learnt to stand. This position is almost that of a "varus" deformity, the inner edge of the foot being pulled up, so that the soles look towards each other. If the weight of the limb or body be thrown thus on the inner side before the structures are developed enough to bear it, or when from weakness they have ceased to be able to support it, there is a valgus or flat-foot. The centre of gravity is thrown so far in that it is supported on a single arch instead of a tripod, and, moreover, this arch supports a pressure, the direction of which is not directly downwards, but downwards and inwards. There is not only then a danger of the arch yielding at its highest point in the vertical direction, but also of giving way laterally from the direction of the pressure. The astragalo-scaphoid joint is the highest and most yielding part of the arch, but it has under it the support of the tibialis posticus tendon as well as the lower calcaneo-scaphoid ligament; but when the centre of gravity presses too much to the inside of the vertical plane of this arch, the inner astragalo-scaphoid ligament yields and allows a partial luxation of the head of the astragalus inwards. Not only then is the plane of that arch, which should be more or less vertical, inclined so as to produce an acute angle with the ground, but its highest point is flattened, or even made to assume an angle pointing downwards. Once this latter process commences it tends to increase from the fact that the head of the astragalus, forced inwards, escapes from the support of the tibialis posticus tendon and calcaneo-scaphoid ligament. As the astragalus, os calcis, and ankle-joint are more fixed than the anterior part of the foot, this begins to yield outwardly to the superincumbent weight, and tends to make an angle salient at the astragalo-scaphoid joint. The weight rests then more or less on the inner and lower aspect of the heel and, at the other extremity of the arch, on the inner side of the ball of the great toe, on which a callosity can be frequently seen. There is also a tendency in the anterior part of the foot to rotate on its antero-posterior

axis, which movement is favoured by the ball-and-socket character of the astragalo-scaphoid joint, and consequently in an advanced case not only is the head of the astragalus forced downwards and inwards to the ground, but the lower tubercle of the scaphoid is rotated outwards, and ceases to be felt as a guiding point. This was verified in the case in which he assisted Mr. Stokes. The essential nature of flat-foot would seem to be a sub-luxation outwards of the anterior part of the foot at Chopart's joint, with a rotation at the same articulation due to the continuous weight from above exercised on a plane too far internal to the normal point of pressure. For the reasons he had given, he was satisfied that the disease commences in the ligamentous and tendinous structures; that if the bones eventually exhibit deformity it is from growth in some direction from which natural pressure has been removed.

Mr. Swan, instead of praising the papers, preferred stating the impression which they made upon him. He was reluctantly compelled to say he considered most of Mr. Stokes's statements were misleading, and some of them appeared to him to be erroneous. Mr. Stokes had stated that the deformity of flat-foot was due to a mal-development of the bony structures of the tarsus, and without considering the degree or state of the affection he condemned all methods of treatment as useless except the operations, in which doubtless he included Ogston's as well as his own. He had himself, albeit the rarity of flat-foot, thirty-four cases in minor or greater degree, and had observed it under three distinct phases. It commenced with the sliding of the astragalus inward and the upper surface of the os calcis relaxing the ligament connecting the outside of the astragalus with the calcis. This produced, as Mr. Corley observed, an obliquity at the ankle-joint. The axis of the weight was thrown on its side. Next, there was a relaxation of the plantar ligament. Looking at the anatomy of the parts, the outer division of the plantar ligament fills up the sinus pedis, which prevents displacement of the head of the astragalus, but the interval between the os calcis and the scaphoid is lengthened. Mr. Stokes had stated he observed this in persons of strong health. That was not, however, his experience. It was most common in weak, growing youths or girls, or in the class usually designated as leuko-phlegmatic. Again, examine the occupations those people subject to the deformity had followed. In his thirty-four cases no less than eighteen were grocers' assistants, confined in an unhealthy atmosphere all day and standing constantly. This would produce ligamentous relaxation. He was not prepared to say what influence this had on the ætiology of the affection. It was not an uncommon affection in people advanced in years subject to rheumatic arthritis, of which there were examples in the College Museum. In the second stage it was accompanied by a fusion of the muscular structures, which were chiefly of the anterior portion of the foot. The adductor

pollicis and the muscles on the inner portion of the foot were atrophied, and the bones could be distinctly felt through those muscles. The tibialis posticus was involved. The third and last stage was one for which no doubt an operation of some kind would be desirable—namely, when the sole of the foot was altogether flattened and the head of the astragalus came upon the ground, and he believed also, as Mr. Corley had stated, occasionally the projecting point of the scaphoid. With regard to treatment, it would be too much to admit that all those cases which in the first and second stages did not present serious inconvenience were suitable for operation. The true clue to the treatment of the affection in the earlier stages was to approximate the extremities of the tendinous structures binding the bones together. If bony enlargement or mal-development caused the affection, how was it that in all those cases the foot could be reduced to its pristine symmetry by manipulation? That could not be done in the case of bony deformity. There was a distortion and rotation inwards of the astragalus, as Mr. Corley observed, but there was no enlargement until the last stage, when osteitis was the cause of the enlargement of the bone. He had seen spontaneous cures of the affection. In the case of a patient condemned to long-continued rest the foot regained its natural shape. Ogston's seemed to be the natural method to restore the arch of the foot, allowing the gradual restoration of the ligamentous structures, which appeared to be untouched in the operation.

The President suggested the excision of a wedge-shaped piece from the side of the astragalus without opening the ankle-joint. It was important to observe the distinction between the congenital flat-foot and the acquired. The observations made had been directed to the acquired. He did not know that any treatment would remedy the congenital, the shape of the bone being at fault, whereas in the acquired flat-foot the prime lesion was the ligamentous relaxation. In his experience the greatest predisposing cause was the fact that the sons of artisans in the city, bred under unsanitary conditions, were put so early to labour. The first and second stages of the affection were most painful.

Mr. Stokes replied. He regretted that Dr. Franks, who took exception to some of his statements, was unable to be present. Anything he had heard in the discussion had not in the slightest degree shaken the position which he had taken. He was still strongly of opinion that the old theory of ligamentous relaxation, being the chief factor in the production of the deformity, was altogether erroneous, and should be discarded. It was, in his opinion, the result and not the cause of the deformity; and the specimen which he exhibited, and also that described by Mr. Symington in the last number but one of Professor Turner's *Journal of Anatomy*, bore out his view. Mr. Swan had spoken of his thirty-four cases of flat-foot, and described, with great earnestness, a

first, a second, and a third stage of the deformity; but he had not stated that he had ever had an opportunity of examining the bones of the deformity in any one of those stages. If he had done that, his observations would have carried more weight than they had with him. For his own part he would have been slow, without the advantage of dissection, to have made use of the terms "misleading" and "erroneous" in the same way as Mr. Swan had done. One dissection was worth any number of cases of flat-foot in the living subject. No one could regard the specimen before the meeting without coming to the conclusion that ligamentous relaxation could have had nothing whatever to say to the production of the deformity. Doubtless the inferior calcaneo-scaphoid ligament was elongated; but the elongation of a ligament did not prove that it was relaxed, any more than an indiarubber cord, six inches long, when stretched to twelve inches. Another point, as showing that the condition of flat-foot in this specimen was the result of osseous deformity, was the direction of the sustentaculum tali being different from what it was in the normal position. He did not think any anatomist would hold the opinion that any relaxed condition of the plantar ligament could affect that portion of the bone. There were, therefore, in two bones of the tarsus definite changes, neither of which could be produced in any degree by relaxation of the ligaments. Again, relaxed ligaments were looked upon as the sole cause of genu valgum, until Professor Ogston's operation, showing that it was a purely mechanical condition, the result of a deformity of the inner condyle of the femur, and that by dividing the inner condyle, and displacing it upwards, to place it on a level with the external condyle, the deformity could be reduced. His own was an analogous case. The deformity was produced by changes in the bone and not by changes in the ligaments; and, therefore, to bring about as nearly as possible the normal condition of things, he maintained the surgeon must deal with that condition which caused the deformity—namely, the change in the bones themselves. In that view he was enormously strengthened by Symington's dissections, and by a second specimen, for which he was indebted to the President, being infinitely more valuable than any number of cases of flat-foot seen in the living subject. He took exception, however, to Ogston's operation—first, on account of its difficulty; and secondly, though he did not question the results, being in many respects satisfactory, yet he considered the operation had a two-fold defect—(1) the application and the necessary difficulty of it; (2) the fact that it left a permanently damaged foot. Chopart's joint was one of the most important articulations in the foot, and the obliteration of it was a great defect in the operation. Hence, from observing the great deformity in the astragalus, knowing that the same deformity was found by Symington in the os calcis, which could not be produced by ligamentous relaxation, he was of opinion that in the majority of cases the deformity

was due to changes in the bones themselves, and that those changes resulted either from original malformation or from disease, most likely rickets. That was the view which might reasonably be entertained from an examination of the specimens before the meeting, and which was borne out by the investigation of orthopædists in Germany, who maintained, in connexion with other deformities of the foot, that the changes were due to alteration, not in the soft structures, but in the osseous structures themselves. That was the view put forward at the meeting of the International Congress in Copenhagen; and if that view held good as to other so-called congenital deformities, it was more likely to hold good in connexion with pes planus. In the specimen given him by the President the deformity was the reverse of that dealt with in his paper—the displacement of the neck downwards, forwards, and inwards, while here the displacement of the head was outwards and upwards, and the projection was not caused by the head of the astragalus, but was clearly due to the tubercle of the scaphoid, showing that flat-foot may be the result of disease. There was no displacement of the astragalus. If the head of the bone was displaced the normal relations of the bone would be altered, but here the normal relations of the entire surface of the astragalus were preserved. The alteration in the head and neck of the bone were perfectly independent of any displacement of the bone due to ligamentous relaxation. Mr. Swan seemed to think that paralysis of the muscles, especially the tibialis anticus, was one of the principal factors in the production of the injury. Mr. G. Bird had published the result of fifty cases, and in not one could he establish the existence of any paralytic condition of the muscles whatsoever.

Mr. Swan desired to explain that he did not say Mr. Stokes's statements were misleading or erroneous, but that he believed them to be so.

Ivory Exostosis of Auditory Meatus.

Mr. Arthur Benson read a paper, describing the case of a gentleman, aged thirty-three years, on whom he had successfully operated, and had removed an ivory exostosis from the auditory meatus. [It will be found in the April Number of this Journal, p. 280.]

The President congratulated Mr. Benson on furnishing the first recorded case here; but he asked was it a case of ivory exostosis, in the true sense of the word, it being a superficial instead of an internal growth?

Mr. A. Baker said the chief difficulty arose from plugging up the entrance of the speculum, consequent on the dental drills being so short.

Mr. Story considered that Mr. Benson was to be congratulated on the admirable results of his treatment. For his own part, though, he would not advise any operation until the growth of an exostosis had become sufficient to produce permanent deafness, at least in one ear. He gave a brief description of a case of aural exostosis, in which he had some three

years ago obtained excellent results by the application of Vienna paste after drilling and electrolysis had failed. The membrane of the drum was perforated during the treatment, but it rapidly healed up, and for the past three years the patient has had no relapse whatsoever. Exostoses near the external orifice were easy to deal with, either by the hammer and chisel or by the dental saw, which seemed an admirable proposal; but growths deep down in the meatus taxed the utmost resources of the most skilful and experienced otoscopists, and should not be touched except in the case of the most urgent necessity.

Mr. Swanzy could hardly imagine a better mode of operating than the one which had been adopted; but he would not have operated in the case in question, deafness being extremely rare as the result of exostosis in the external meatus. Such growths were among the common diseases of the ear, but absolute or serious deafness was uncommon. He would wait until the growth threatened serious and permanent deafness.

Mr. Benson, replying, said the exostosis was a distinct enlargement of the true bone. The whole question was, how much danger there was in the operation. Most patients would prefer one operation than to go once a month to a doctor to have deafness removed.

Operations for Trichiasis and Entropium of the Upper Eyelid.

Mr. Story read a paper, in which, after criticising the operation proposed by Dianoux, which Mr. Story was the first to introduce to the notice of oculists in these islands, he proceeded to describe the manner in which he now operates both for entropium and trichiasis. The method is, with some trifling modifications, the same as that described by Dr. Van Millingen, of Constantinople—a transplantation of the ciliary border, without removal of any palpebral skin, the requisite elevation of the cilia being effected, after the completion of Flarer's intermarginal incision, by inserting a strip of mucous membrane, taken from the patient's mouth, into the space left exposed by Flarer's cut. Mr. Story has observed that little fistulous openings remain in the palpebral skin under the two extremities of the ciliary border after Dianoux's operation, but has found no harm resulting. The only serious objection to Dianoux's operation consists in the presence of cutaneous hairs which occasionally act as mechanical irritants to the cornea. Van Millingen's operation is not open to this objection, and fulfils the conditions laid down by Mr. Story in the *Ophthalmic Review*, Feb., 1883, to which a good entropium operation should conform—viz., that no tissue be removed from the substance of the eyelid, and that firm support be given to the ciliary border to prevent reinversion, and this support is best given by a piece of buccal mucous membrane transplanted beneath the cilia. Mr. Story does not see any occasion for cutting the tarsus itself when it is incurved; he consequently rejects all grooving operations such as

that of Stratfield, and has seen perfectly satisfactory results from the simple transplantation of buccal mucous membrane in at least five well-marked cases of incurvature of the tarsus—a number quite sufficient to prove the somewhat heterodox views he holds upon the question.

Mr. Swanzy differed entirely from Mr. Story concerning the insignificance of the incurvature of the tarsus. The question in those cases was what happened afterwards, and, though immediate relief was great, how long it lasted. The curvature of the cartilage caused by the shrinking of the conjunctiva went on increasing, and the hairs which had been moved out of the position they were in recommenced to rub on the cornea, or, if that did not occur, there was the margin of the eyelid itself to rub against the cornea. He considered Mr. Story's operation was good for trichiasis, but not for entropium.

Mr. Stokes did not understand what was the great advantage derivable from transplanting a piece of rabbit or mucous membrane into the space made between the tarsal cartilage and the ciliary border of the eyelid. He concurred with what Mr. Swanzy had said about entropium caused by incurvature of the cartilage; but in cases of trichiasis, if Arlt's operation was done according to the rules which he had laid down, it was unnecessary to complicate it by transplantation of skin or of mucous membrane taken either from the human subject or the lower animals.

Mr. Benson corroborated Mr. Story's account of the satisfactory results of his operation. He had never used rabbit's conjunctiva himself.

Mr. Story replied. In reference to Mr. Swanzy's statement that the cure of entropium proper by the operation described could be only apparent and temporary, although trichiasis might be permanently cured thereby, he could only assert that his experience, which was considerable, had made him form a contrary opinion. An objection of this kind was of common occurrence when an improved operation was suggested, and time would prove its invalidity. Mr. Stokes had asked why was not Arlt's transplantation sufficient, and why should mucous membrane be transplanted? Arlt's transplantation frequently failed to produce permanent cure of the deformity in question, and was an unsound proceeding, because it occasionally produced lagophthalmus. A proof of its defects is to be found in the fact of so many men taking the trouble to invent novel operations. Mr. Story noticed in the discussion upon the subject at Eisenach in 1882 that hardly any oculist present performed Arlt's operation in its purity. The mucous strip was necessary to give support to the cilia from below in order to prevent reinversion.

The Section adjourned.

OBSTETRICAL SECTION.

President—Lombe Atthill, M.D.
Sectional Secretary—William C. Neville, M.D.

Friday, March 6, 1885.

The President in the Chair.

Dr. Neville, Sectional Secretary, read the minutes of the previous meeting, which were confirmed.

The President mentioned that since the last meeting of their Section the General Council, at the instigation of the Obstetrical Council, had adopted a rule by which, in future, specimens might be shown and discussions take place thereon up to the hour of 9 o'clock. The papers for the evening would then be taken and discussed, after which any further specimens might be exhibited.

Treatment of Uterine Fibro-Myomata.

Dr. More Madden exhibited five uterine tumours which he had recently removed from patients in the Mater Misericordiæ Hospital, in illustration of his paper upon the Treatment of Uterine Fibro-Myomata. The history of these cases is as follows:—

Case I.—*Recurrent Fibroid; Écrasement.*—K. N., aged twenty-eight, unmarried, was admitted January 4th. Two years previously she had been under my care in the hospital, suffering from menorrhagia. The uterine cavity was then dilated, and a small pedunculated myomata, growing from the anterior wall, removed. At the same time a second larger tumour was discovered deep within the posterior wall. It was not then considered advisable to interfere with this. The menorrhagia subsided in great measure, and she left the hospital. Some months later it again commenced, and for the past eighteen months she lost a considerable amount of blood, and when readmitted was in an extremely exhausted condition. The os was dilated in the usual way, and on examination next day we were pleased to find that the tumour, now as large as a fœtal head, had developed into the uterine cavity, and become pedunculated. The pedicle, which, as may be seen, was extremely thick, was divided by écrasement, and the tumour extracted. She made a good recovery after this operation.

Case II.—*Submucous Fibro-Myomata removed by Écraseur.*—S. Q., a married woman, aged forty-four, who had repeated miscarriages but no family, was admitted into St. Monica's ward, January 14th, suffering from profuse metrorrhagia and frequent attacks of intense uterine colic. These symptoms had been first observed eighteen months before

admission, and on examination a small tumour could be felt above the pubes. The uterus was enlarged and drawn up. The sound could not be passed in any direction more than an inch above the os internum, but on recto-abdominal examination the size and position of the uterus, which was slightly retroflexed, could readily be made out. Being placed under ether, rapid dilatation of the cervix was effected by Lawson Tait's dilators, and then by my fingers. The cavity of the uterus thus laid open was found distended by a large pedunculated submucous fibro-myomata, around which, as being tightly encircled by the uterine walls, the steel wire loop of the écraseur was with some difficulty slipped up to its attachment to the posterior wall, close to the fundus. The thick pedicle was then slowly divided, but with no amount of tractile force with two strong vulcella, in the hands of Mr. Kennedy and myself, could we succeed in extracting the freed tumour through the uterine outlet, until at last we were obliged to resort to a free bilateral division of the os and cervical zone, and in this way removed the tumour now shown. In doing so some disruption of the perinæum was necessarily produced. This was immediately treated by a couple of silver wire sutures. The after-treatment consisted mainly in hot antiseptic injections twice a day. Within a fortnight's time she was up and going about the ward, being perfectly convalescent after the operation. Subsequently, however, she was attacked by typhoid fever, of which she died.

Case III.—*Intra-Mural Fibro-Myomata removed by Enucleation.*—L. B., an anæmic-looking woman, aged thirty-eight, unmarried, suffering from metrorrhagia, pelvic pain, and hæmorrhage, was admitted to St. Elizabeth's ward. Until two years previously she had been in good health. She then commenced to suffer from menorrhagia which gradually increased, and the intervals between the recurrence of the discharge became so diminished that for the past year she has seldom been a week free from hæmorrhage. On examination the uterus was found retroverted by a tumour in the posterior wall, and the uterine cavity greatly elongated. The cervical canal was dilated by laminaria bougies, on the removal of which she was etherised, and a submucous tumour discovered occupying the posterior wall from the fundus to near the cervix, and bulging out into the uterine cavity. A free longitudinal incision was made through the thinned muscular structure into the capsule of the tumour, which was firmly seized with a strong vulsellum and drawn down by Mr. Kennedy towards the outlet, whilst with my finger I rapidly separated the loose adhesions around and behind the tumour. This was now forced out of its bed and extracted per vaginam. Immediately afterwards a hot carbolised water injection was thrown up to arrest the free oozing, a tampon of Lawson's cotton saturated in carbolised glycerine was introduced, and an anodyne suppository placed in the rectum. The hot water injection was continued twice daily for the

next ten days, at the end of which the uterus, being still large, was brushed out at intervals with tincture of iodine until it had nearly regained its normal size, and three weeks after the operation she was enabled to leave the hospital.

Case IV.—*Interstitial Myoma removed by Emmet's Operation.*—In this instance I regret I can exhibit only portions of a myoma removed from a multipara aged forty-two. This patient had enjoyed good health until the birth of her last child, four years previously. Shortly after she became a widow. She then began to suffer from menorrhagia, tenesmus, and bladder irritation, and bearing-down sensation, which increased. At last she was forced to give up her occupation as a farmer's servant. On admission the uterus was found completely retroverted, and on endo-uterine exploration a considerable sized tumour was found bulging out into the uterine cavity. This I attempted to remove by enucleation, but on making an incision for this purpose it became obvious that the tumour was not separated by any capsule from the uterine wall, with which it was continuous. Hence, I resolved on trying to effect its removal, if possible, by Dr. Emmet's traction operation. For this purpose the most prominent portion of the tumour was firmly grasped by a vulsellum and forcibly dragged down through the os as far as possible into the vagina. Here as much of the growth as could be reached was cut away with a strong curved scissors. The resulting hæmorrhage was checked by hot water injections, and the remaining portion of the tumour again similarly treated. In this way we had removed more than two-thirds of the growth, when the patient became so collapsed that I was reluctantly obliged to postpone its complete ablation. A hypodermic injection of ether was administered and she was put back to bed. For the two days following her condition was apparently satisfactory, her pulse fairly good, and temperature not rising above 100°. On the second night after the operation she again became collapsed, and, despite the efforts made to save her, she sank and died.

Case V.—*Pedunculated Submucous Fibroid removed by Écrasement.*—A widow, aged fifty, who had had several children, was admitted, suffering from continual uterine hæmorrhage and offensive leucorrhœal discharge. On examination the uterus was found occupied by a tumour as large as the fœtal head at full term. The os was rapidly dilated, and this growth, which proved a semi-pedunculated submucous fibroid, was removed by écrasement in the usual way. After this she recovered rapidly.

Dr. More Madden subsequently read a paper "On the Treatment of Uterine Fibro-Myomata." [It will be found at page 373.]

Dr. Kidd agreed with Dr. More Madden that the prevailing epidemic of laparotomies needed to be stayed. Capital operations should only be

performed when the risk to life was imminent. The treatment required would vary with the site of the tumour—submucous, interstitial, or subserous. If necessary the first two classes of uterine myomata might be removed by enucleation. The submucous variety caused most trouble and danger to life through accompanying hæmorrhages, but interstitial tumours might grow towards the mucous surface, and so become practically submucous. In the same way these tumours might become subserous. The latter class very seldom gave rise to really threatening symptoms such as alone would justify serious operations being undertaken for their removal. Mere inconvenience and some amount of pain would not justify laparotomy. Serious difficulty in defæcation rarely occurred in connexion with these tumours, but micturition might be so difficult as to call for the use of a catheter. He had generally found it possible to relieve such symptoms by lifting the tumour out of the pelvis. He knew many cases in which very large uterine tumours had existed for many years without giving rise to any real danger to life, even though the abdominal and thoracic viscera were much pressed upon and displaced.

Dr. Macan said that everyone would agree that in the absence of proper indications serious operations should not be undertaken. This rule was obvious; but enucleation as an operation he regarded as infinitely more dangerous than a laparotomy. Nor did he accept Dr. More Madden's faith in the efficacy of subcutaneous injections of ergotin. Schroeder had laid down very clear rules and indications for the performance of myomotomy. It was called for in the case of a rapidly-growing tumour in a young woman, when it gave rise to excessive bleeding or pressure effects, or when it interfered with the patient's power of earning her bread. Other indications sometimes requiring operative interference were, according to Schroeder, complication with ascites or with pregnancy. Another rarer indication consisted in evidences of sloughing of the tumour. Removal of the ovaries might in many cases be preferable to myomotomy, but Battey's operation was very difficult and sometimes almost impossible in the cases of large tumours. It would be erroneous to say that menopause held out certain prospects of the cessation of the growth of uterine tumours.

Dr. Byrne thought that the dangers of uterine tumours complicating pregnancy had been overrated. He believed with Dr. Kidd that the more serious operations were very seldom required.

The President pointed out that all of the tumours presented by Dr. More Madden except one were intra-uterine and pedunculated. He entirely differed from Dr. More Madden in his estimate of the difficulties and dangers of enucleation. More difficult and less successful operations he had never performed. In his experience enucleation was most often left unfinished. He had some time since made up his mind never again to

attempt this operation, except upon examining the uterus he found the tumour so circumstanced as to lead him to think that it would come away very easily. Myomotomy he looked on as a very dangerous operation, and not to be undertaken without the clearest indications. Death from pressure or from bleeding was very exceptional in these cases. He had entirely lost faith in subcutaneous injections of ergotin. They could be of possible use only in the case of intramural tumours. He had lately practised incision over the tumour with subsequent injections of iodised phenol into the cavity of the uterus at fortnightly intervals with very distinct advantage.

Dr. Purefoy having spoken,

Dr. More Madden replied, and the Section adjourned.

A NEW METHOD OF EMBALMING BODIES AND PRESERVING TISSUES.

Dr. Virodzeff recommends the following preparation as an efficient agent in the embalming of bodies and the preservation of tissues:—Thymol, 5 parts; alcohol, 45 parts; glycerine, 2,160 parts; water, 1,080 parts. It is cheap, innocuous, free from unpleasant odour, possesses the property of keeping the body soft, elastic, fresh, and life-like, and does not ruin instruments. Thymol is selected as being superior to other antiseptics, and glycerine is added, both on account of its own preservative qualities and to retard the evaporation of the fluid. For the preparation of tissues the same solution is used. If the cadaver be quite lean, or the tissues very delicate, equal parts of water and glycerine (1,620 of each) are combined with the above quantities of thymol and alcohol. To inject a body, half its weight of the fluid is necessary. A properly embalmed cadaver may be preserved indefinitely under ordinary circumstances, gradually shrinking and mummifying without putrefaction. Specimens are either to be injected with or macerated in this fluid. Maceration must not be too prolonged—the appearance of the specimen should act as a guide. The part, after having been thoroughly cleansed in water and prepared, may then be exposed for months to the air without losing its consistence, form, and colour. Permanent specimens may be enclosed in a hermetically-sealed glass vessel containing a little of the same solution. The *Medical Record* says that Dr. Peabody has used this preserving fluid with excellent results in the New York Hospital Museum.—*Midland Med. Miscellany.*

ERGOT AS A REMEDY FOR CONSTIPATION.

Granzis (*Allg. med. Ctrl. Ztg.*) recommends ergot, in doses of ten grains every two hours, until three doses have been given. This treatment is particularly applicable to cases of constipation depending upon atony of the bowel.—*N. Y. Med. Jour.*, Feb 7, 1885.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, M.D., F.K.Q.C.P., F. R. Met. Soc.

Vital Statistics

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, March 28, 1885.

Towns	Population in 1885	Births Registered	Deaths Registered			Deaths from Seven Zymotic Diseases							Deaths from Phthisis	Death-rate per 1,000	
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa		From all causes	From seven Zymotics
Dublin, -	353,082	832	995	174	238	–	49	15	3	16	23	13	128	36·7	4·4
Belfast, -	219,222	456	558	98	92	–	27	7	5	11	9	14	96	33·2	4·4
Cork, -	80,124	165	194	29	54	–	–	–	–	14	2	2	25	31·5	2·9
Limerick, -	38,562	65	92	11	38	–	–	–	–	2	1	–	8	31·1	1·0
Derry, -	29,162	66	49	4	19	–	–	1	–	–	3	–	4	21·8	1·8
Waterford,	22,457	58	84	10	15	–	28	–	–	–	–	1	2	48·7	16·8
Galway, -	15,471	31	17	2	4	–	–	–	–	–	–	1	3	14·3	0·9
Newry, -	14,808	28	16	4	3	–	–	–	–	–	–	–	4	14·0	–

Remarks.

In the eight selected towns included in the foregoing Table the highest death-rates are 48·7 per 1,000 of the population annually in Waterford, 36·7 in Dublin, 33·2 in Belfast, and 31·5 in Cork; the lowest rates are 14·0 in Newry, 14·3 in Galway, 21·8 in Derry, and 31·1 in Limerick. The rate of mortality from seven chief zymotics ranged from 16·8 per 1,000 per annum in Waterford, 4·4 in Dublin and in Belfast, 2·9 in Cork, 1·8 in Derry, 1·0 in Limerick, and 0·9 in Galway to *nil* in Newry.

The recorded deaths represent a rate per 1,000 of the population annually of 22·4 in twenty-eight large English towns (including London, in which the rate was 21·0), 32·2 in the sixteen chief towns of Ireland, 29·7 in Glasgow, and 19·5 in Edinburgh. There is a slight increase (from 21·2 to 22·4) in the mortality in the English towns generally; and in London it has also risen in proportion—from 19·7 to 21·0 per 1,000 per annum. It has risen slightly in Glasgow (from 29·3 to 29·7), and also more decidedly in Edinburgh (from only 17·8 to 19·5). In the Irish towns the rate of mortality has again risen from 30·8 to 32·2. If

the deaths (numbering 33) of persons admitted into public institutions from localities outside the Dublin Registration District are deducted, the death-rate of that district becomes 35·5, while that of the portion of the district included within the municipal boundary is 39·5. In London the epidemic of smallpox still subsides slowly: the deaths were 109, compared with 197 and 229 in the two preceding periods of four weeks each. The weekly number of deaths from this disease since the beginning of the year have been 56, 42, 70, 58, 59, 60, 56, 44, 37, 27, 35, 23, and 24 respectively. The deaths from diarrhœal diseases in the same city, which numbered 36 in the four weeks ending February 28, were 51.

Acute febrile zymotics were returned as the cause of death in 135 instances in the Dublin district, compared with a ten-years' average of 118·6 in the corresponding period and 88 in the previous four weeks. The 135 deaths included 49 from measles, 15 from scarlet fever, 23 from "fever," 16 from whooping-cough, 13 from diarrhœal diseases, and 3 from diphtheria. The epidemic of scarlet fever continues to decline gradually, the deaths being 2 fewer than in the four weeks ending February 28. Of the 15 fatal cases, only 3 occurred in the South City Districts, 6 in the North City Districts, 2 each in the Kingstown and Blackrock Districts, and 1 each in those of Rathmines, Finglas and Glasnevin, and Coolock and Drumcondra. Of the 23 deaths referred to "fever," 14 were ascribed to enteric fever and 5 to typhus, while in 4 instances the exact nature of the fever was either not specified or was ill-defined. The deaths from fever were 13 more than those registered (10) in the four weeks ending February 28. Five children aged between one and five years succumbed to scarlet fever. Fifteen of the 16 victims of whooping-cough were under five years of age, including six infants of less than twelve months old.

Measles caused 49 deaths in Dublin, 28 in Waterford, and 27 in Belfast. In Waterford the epidemic of measles continues to be very deadly; and in Dublin and Belfast it has become more destructive to life and is very widespread. Since the beginning of the year the weekly numbers of deaths in Dublin have been 3, 3, 3, 5, 3, 5, 10, 11, 8, 10, 11, 16, and 12 respectively. Of the 49 victims to the disease, whose deaths were registered in the four weeks, 41 were under 5 years of age, including 13 infants of less than twelve months. The outbreak continues to prevail with special violence in the North City Districts, in which 27 out of the 49 deaths were registered. In No. 1 North City District alone there were 17 deaths from measles. In the South City Districts the deaths were 22 against 3 in the previous four weeks, showing a serious spread of the epidemic. In No. 4 South City District 10 deaths were referred to measles.

Scarlet fever was fatal in 7 instances in Belfast, and in one case in Derry.

Diarrhœal diseases were credited with 31 deaths in the eight towns, compared with 28 in the previous four weeks. In London the weekly registered deaths from diarrhœal diseases were 7, 14, 12, and 18 respectively.

In the Dublin Registration District 832 births and 995 deaths were registered, compared with 829 births and 892 deaths in the previous four weeks. The births were those of 442 boys and 380 girls. The deaths of infants under one year were 174 against 155 in the previous four weeks; those of persons aged 60 years and upwards were 238 compared with 224 in the previous period.

The deaths referred to pulmonary consumption in the eight towns were 270, compared with 244 and 239 in the two preceding periods of four weeks each. In Dublin diseases of the respiratory organs are stated to have caused 246 deaths, against an average of 215·2 in the corresponding four weeks of the previous ten years, and compared with 225 and 213 in the two preceding periods of four weeks each. The 246 deaths included 150 from bronchitis (average = 157·4) and 50 from pneumonia (average = 33·2). The great mortality from pneumonia depended to a certain extent on the cold and searching weather experienced throughout March. Of the 150 persons who succumbed to bronchitis, 28 were infants under twelve months, whereas 48 had passed their sixtieth year.

On Saturday, March 28, 1885, there were under treatment in the principal Dublin hospitals no cases of smallpox, 86 cases of measles, 46 of scarlet fever, 37 of typhus, 15 of enteric fever, and 10 of pneumonia.

The mean temperature of the four weeks was 40·9° in Dublin, 40·8° in Belfast, 43·9° at Roche's Point, Co. Cork, 39·8° at Glasgow, 40·2° in Edinburgh, and 39·9° at Greenwich. The minimal readings of the thermometer in the screen were 29·0° in Dublin, 28° at Belfast, 32° at Cork, 23·0° at Glasgow, 27·0° in Edinburgh, and 25·2° at Greenwich.

The weather was very cold during the greater part of the period, so that a falling off in the temperature instead of an increase occurred as compared with the previous four weeks.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of March, 1885.

Mean Height of Barometer, - - -	30·091 inches.
Maximal Height of Barometer (on 14th, at 9 a.m.),	30·647 ,,
Minimal Height of Barometer (on 3rd, at 9 p.m.), -	29·064 ,,
Mean Dry-bulb Temperature, - - -	41·1°.
Mean Wet-bulb Temperature, - - -	38·6°.
Mean Dew-point Temperature, - - -	35·6°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·210 inch.

Mean Humidity, - - - - -	81·7 per cent
Highest Temperature in Shade (on 26th), - -	58·6°.
Lowest Temperature in Shade (on 12th & 15th), -	29·0°.
Lowest Temperature on Grass (Radiation) (on 12th),	25·1°.
Mean Amount of Cloud, - - - -	56·0 per cent.
Rainfall (on 13 days), - - - -	1·530 inches.
Greatest Daily Rainfall (on 3rd), - -	·305 inch.
General Directions of Wind, - -	W., N.N.E., N.W.

Remarks.

A cold, generally dry month—searching "polar" winds prevailed to a large extent, and the distribution of atmospherical pressure was often anticyclonic in the neighbourhood of the British Islands. The mean height of the barometer was 30·091 inches, or 0·168 inch above the average value for March—namely, 29·923 inches. The mercury rose to 30·647 inches at 9 a.m. of the 14th, and sank to 29·064 inches at 9 p.m. of the 3rd. The range of atmospherical pressure was, therefore, 1·583 inches—slightly more than an inch and a-half. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 41·1°; that calculated by Kaemtz's formula from the means of the daily maxima and minima was 40·7°, or 2° below the average mean temperature for March, calculated in the same way, in the twenty years, 1865–84, inclusive (42·7°). The arithmetical mean of the maximal and minimal readings was 41·8°. On the 26th the thermometers in the screen rose to 58·6°—wind S.W.; on the 12th, and again on the 15th, they fell to 29·0°. The minimum on the grass was 25·1° on the 12th. The rainfall was 1·530 inches, distributed over 13 days. The average rainfall for March in the twenty years, 1865–84, inclusive, was 2·081 inches, and the average number of rainy days was 16·5. Both rainfall and rainy days, accordingly, were considerably below the average. Snow fell on the 18th, sleet on the 10th and 29th, and hail on the 6th, 8th, 18th, and 27th. A solar halo was seen on the 31st. An aurora borealis appeared on the evening of the 15th. The atmosphere was foggy on the 3rd and 4th, as well as in the anticyclonic periods from the 10th to the 15th, the 21st to the 23rd, and the 30th and 31st.

The month opened with a long band of high atmospherical pressure lying over Great Britain, while the barometer was falling in Ireland, where the wind veered towards S.E. and freshened. The decrease of pressure was followed by three dull wet days in Ireland, the wind at first being very strong from S.E. to S. On Wednesday, the 4th, a smoke-fog became suspended in mid-air over Dublin, producing great gloom in the city after midday. An increase of pressure now occurred in the N.W., so that N.E. winds set in, bringing brighter and colder weather.

After the 8th, cold, quiet, anticyclonic weather prevailed in Ireland

for several days. The nights were very sharp, and foggy mornings were succeeded by bright, bracing days, with easterly breezes. The centre of the anticyclone lay over Ireland, where at last the barometer rose to 30·65 inches on the 14th. At Parsonstown the night frosts during this period were more severe than at any station in Great Britain, the minimal temperatures on the 8th and following days being 33°, 28°, 22°, 24°, 22°, 25°, and 26°. Those in Dublin for the same days were 38°, 34°, 30°, 31°, 29°, 33°, and 32° respectively.

In the third week (15th to 21st), the weather, although not so cold as previously, was chiefly polar in character, dry harsh winds from points between W. and N. being prevalent. On the evening of the 15th an aurora borealis was seen in Dublin and the N. of Scotland. Next day an extensive depression brought squally, westerly winds and showers, succeeded on the 18th by a northerly gale and frequent showers of hail and snow. By 8 a.m. of the 20th, another very large depression, in the centre of which the barometer ultimately fell to 28·50 inches, had advanced from the westward to Scandinavia. Strong W. to N.W. winds prevailed generally, and a whole gale was felt in the W. of Scotland, where snow fell heavily at night.

Changeable weather—consequent on the occurrence of sudden fluctuations of atmospherical pressure—was experienced in the fourth week (22nd to 28th). After Monday, the 23rd, the general type of weather in the British Islands was south-westerly, nevertheless the air was dry and searching, except on the 26th, when it was mild for a few hours, the thermometer rising to 58·6°, the maximum of the month, in Dublin. A fresh N.E. gale and heavy fall of wet snow occurred in the S.E. of England on the morning of Sunday, the 22nd. On the 29th and 31st, V-shaped depressions passed over Ireland, keeping the weather in an unsettled state, and causing sudden shifts of wind on both occasions from S.W. to N.N.W. Thus closed a month remarkable for its bleakness and dryness. It is worth noting that the mean minimal temperature on the grass, 30·9°, was 3·3° below that recorded in January, and 2·9° below that recorded in February.

THE TREATMENT OF SICK-HEADACHE.

Dr. W. Gill Wylie, of New York, has produced excellent results with the following method of treatment:—So soon as the first pain is felt, the patient is to take a pill, or capsule, containing one grain of inspissated ox-gall and one drop of oil of gaultheria, every hour until relief is felt, or until six have been taken. Dr. Wylie states that sick-headache as such is almost invariably cut short by this plan, although some pain of a neuralgic character remains in a few cases.—*N. Y. Med. Jour.*, Feb. 7, 1885.

PERISCOPE.

ELECTRICITY AS A STIMULANT IN CARDIAC AND RESPIRATORY FAILURE.

It is much the custom to have electrical batteries at hand in case of accidents during the administration of anæsthetics, in many instances with a very vague idea as to how to use them should supposed necessity arise, and an ignorance of the danger that may be done by their application. Dr. Gaspar Griswold recently read a paper on this subject at the New York Academy of Medicine (*Medical News*, Feb. 28), which contains the result of some important physiological and experimental observations. He shows, first, that the heart cannot be thus stimulated except by the application of electricity to the heart itself. As a matter of fact, it was found that when one or both electrodes were placed over the præcordial region the heart-beat was retarded. In regard to the respiratory function, he said that the stimulation of the phrenic nerve caused contraction of the diaphragm, and it was perfectly rational therefore to apply electricity to the neck for the purpose of counteracting respiratory failure. This might be done in two ways, either by applying a mild current continuously, or by employing one of sufficient strength to excite at once a deep inspiration, and repeating it at intervals of three or four minutes. Good results had been reported from its use in this way in opium-poisoning, but the effect was always due to the stimulation of the phrenic nerve alone. Theoretically it was impossible to apply a current to the phrenic without affecting the pneumogastric also, because they lay so close to each other in the neck. The function of the pneumogastric was to retard or even stop the heart's action; but as in opium-poisoning this nerve was apt to be paralysed, electricity could be applied to the neck in this condition with a prospect of its affecting only the phrenic nerve. He knew of one case of opium-poisoning, however, in which instant death was produced by the sudden application of a current in this locality for the purpose of stimulating the phrenic, through the effect that it had upon the pneumogastric. The conclusions which he derived from the foregoing considerations were—1. That electrical stimulation of the phrenic nerve is liable to stimulate the pneumogastric also; 2. That only mild currents should be employed; and, 3. That especially should the sudden application of a strong current in the neck be avoided. In chloroform-poisoning, however, the pneumogastric retains its excitability, and it is, therefore, extremely dangerous to apply electricity to the neck in this condition. In asphyxiation by ether, he found that the heart could stand stimulation of the pneumogastric as well as in health, and he concluded, therefore, that it was safe to stimulate the phrenic nerve to a certain

extent in this condition. Chloroform was a direct cardiac depressant, while ether was not. In opium-poisoning, when well marked, the pneumogastric was paralysed, and there was, therefore, less danger in stimulating that nerve in this condition than in health. When morphia was injected into a vein, however, he found that the case was different, and the deduction that he made from this experiment was that when morphia is injected into a vein, the heart is easily depressed by the application of electricity to the pneumogastric. His general conclusions were as follows:—First. Electricity cannot be applied clinically in such a way as to stimulate the heart, literally speaking. Second. The application of one pole of the battery to the neck and the other over the præcordial region, when the pneumogastric is not paralysed, may result in death. Third. The stimulation of the phrenic nerve also stimulates the pneumogastric, on account of the proximity of the two nerves. Fourth. The liability to depress the heart from stimulation of the pneumogastric in connexion with the phrenic is not great in aconite, ether, or opium-poisoning, on account of the paralysis of the pneumogastric produced by these drugs. Fifth. In heart-failure from chloroform, and the injection of morphia into a vein, the application of electricity to the neck is strongly contraindicated. Sixth. Under no circumstances should a current strong enough to cause muscular con traction be applied suddenly to the neck.

DECAPITATION AND PHYSIOLOGICAL RESEARCH.

On Friday, the 24th of April, Gamahut, the murderer of Madame Ballerick, was guillotined in the Place de la Roquette, Paris. In thirty-five minutes after the "*couperet*" had descended the head was in the School of Medicine, in an apparatus which held it in the natural upright position. The calvarium had also been removed, along with the dura mater; and a series of very interesting experiments were performed upon the still warm, and so recently living, cerebral mass. The object of the experiments was to ascertain the result of electrical and other stimulation of the motor tracts of the brain upon muscular action, with a view to extending our knowledge of cerebral localisation. Very interesting results were obtained; movement of the facile muscles being produced by the irritation of portions of the brain. A detailed account will be shortly published. Two days previously the head of another criminal, who was executed at Riom, in the department of Puy de Dôme, was also the subject of physiological experiment. This was conducted in a room beside the scaffold, and within thirty seconds of the fall of the knife, by Dr. Pajolat, Professor of Physiology in the School of Medicine, Clermont (the chief town of the department), in the presence of the Faculty of Medicine, and of the local magistrates. The object of the investigation was to continue tbe researches made by Dr. Laborde, of Paris, as to the

time that sensibility continues after decapitation. The neck had been severed at the level of the top of the larynx, the intervertebral fibro-cartilage having been cut through by the fatal knife. The head was pale, but not empty of blood, and the eyes were closed. The eyelid having been raised, and the front of the eyeball irritated with a cataract needle, the organ moved rapidly several times. A strong whistling having been made into the left ear, the pupil of the left eye dilated sensibly. Irritation of the mucous membrane of the nasal fossæ produced no effect; but that of the pharynx caused movements of deglutition. The most striking result was the movements of the eyeballs, and this experiment was, at the request of the magistrates, repeated. Of course it is a nice question how far these results were due to vital sensibility, or were of a merely reflex muscular character. F. J. B. Quinlan.

THE PHYSIOLOGICAL ACTION OF COCAIN.

Dr. H. M. Biggs, of New York, publishes, in a late number of the *Journal of the American Medical Association*, a valuable article upon this subject, which is founded on a series of experiments conducted by the author in the physiological laboratory at Berlin. Twenty-one experiments are minutely described, and carefully prepared tables are added. The paper is such a scholarly one that we cannot do justice to it in a brief abstract. The writer summarises the results of his experiments thus:—"In conclusion, then, the action of cocain on the frog may be summed up as follows: 1. It has a powerful local anæsthetic action on the skin, the mucous membrane, and the eye. It usually produces mydriasis. 2. It has a depressant action on the heart, reduces the force and frequency of its pulsations, and finally paralyses it (first the ventricles and then the auricles) in diastole. 3. In small doses it at first slightly increases the number of the respirations, then decreases it, and in large doses diminishes it rapidly from the first, finally causing death from a paralysis of respiration. 4. It at first slightly heightens and then greatly depresses the reflex action of the spinal cord in small doses. Large doses depress from the first. 5. Small doses at first slightly increase the irritability of the sensory nerves, then depress their irritability, and large doses depress from the first. 6. Both large and small (not very small) doses have a depressant action on the motor nerves. 7. It paralyses the pneumogastric nerves. 8. Doses of moderate size diminish the excitability of the striated muscles. 9. The local application of cocain to any of the more highly constituted organs or tissues causes a temporary cessation of their functional activity. 10. From the local and constitutional action on the different organs and tissues, it is rendered probable that its general action is a local one, exercised on all parts for which it has a chemical affinity, through its presence in the blood. The results of these experiments would seem to indicate the use of cocain in tetanus and strychnine poisoning."—*N. Y. Med. Jour.*, Feb. 7, 1885.

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MEDICAL SCIENCE.

JUNE 1, 1885.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XXII.—*Resection of the Humerus at the Shoulder-joint.*[a] By W. I. WHEELER, F.R.C.S.I.; ex-President and Member of Council, Royal College of Surgeons, Ireland; M.D. and Master of Surgery, University of Dublin; Member of the King and Queen's College of Physicians; Fellow of the Academy of Medicine, and ex-President of the Surgical Section; Surgeon and Lecturer on Clinical and Operative Surgery to the City of Dublin Hospital.

THE fact that in civil practice cases are comparatively so rarely encountered necessitating the operation of resection of the humerus at the scapulo-humeral joint, induces me to record the histories and results of the three most recent instances in which I performed this operation. The portions of bone removed in two of these cases have already been shown at meetings in the Royal College of Surgeons in Ireland. Now I exhibit both the patient upon whom I last operated and also the diseased structures removed by that operation. The records upon this subject in civil practice are indeed limited. In the fourth volume of the "National Encyclopædia of Surgery" the accomplished writer states that only in a single instance during his experience was he obliged to resort to this particular operation.

The first case whose treatment I shall detail was admitted under my care into the City of Dublin Hospital in October, 1881.

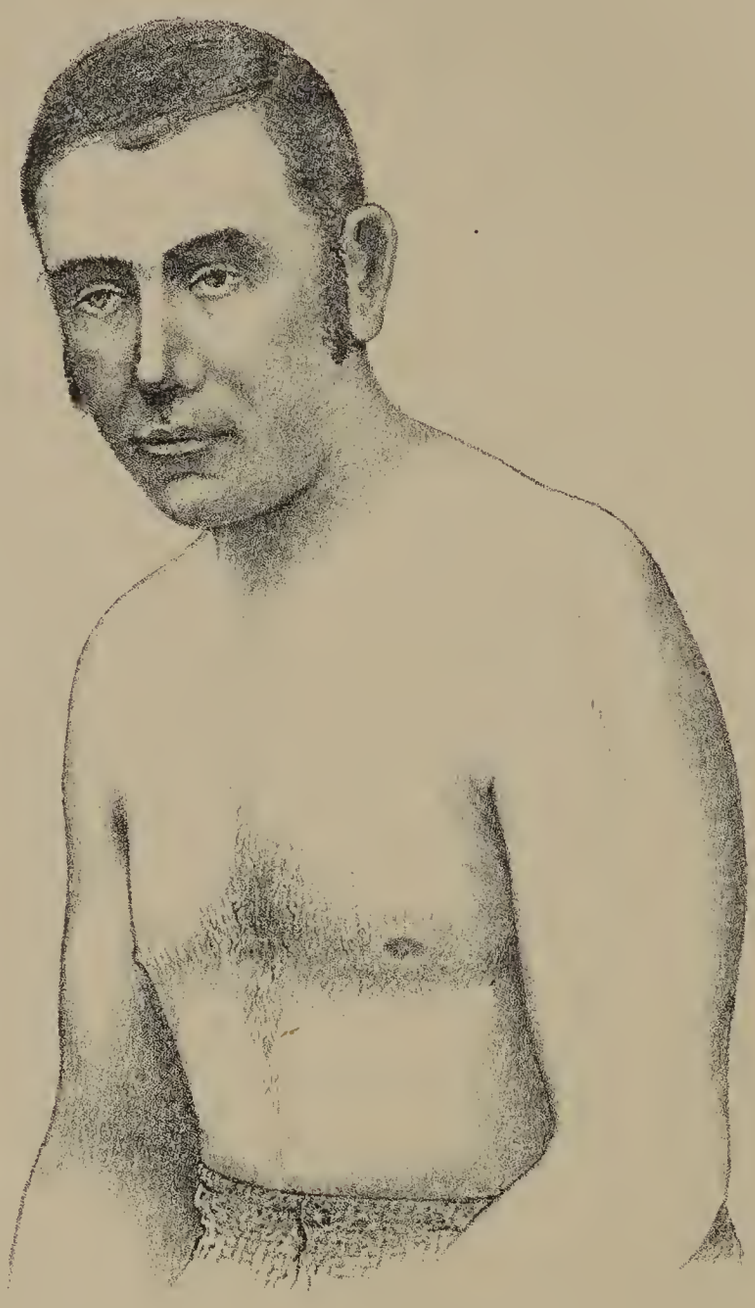
[a] Read before the Surgical Section of the Academy of Medicine in Ireland, on Friday, March 20, 1885.

Case I.—A female, aged thirty-seven years, having disease of her right shoulder-joint. The record of her case states that two years previously, when milking, she was knocked down by a kick, and her shoulder severely hurt; it was greatly swollen after the accident, and various remedies were applied to reduce existing inflammation and swelling, which, however, never completely disappeared; in about a year after the first injury she received a blow on the same shoulder, the swelling increased almost equally in extent to that resulting from the original injury, and within a year from this period an abscess formed, which, having broke, was discharging at the time of her admission to hospital.

There was no difficulty in diagnosticating the nature and extent of the disease. A probe could, with facility, be passed through the opening before referred to, whereby the extent of the carious condition was ascertainable, engaging both the head of the bone and the rim of the glenoid cavity. The operation of resection having been decided upon, I made an incision, commencing a little to the outer side of the coracoid process, and cut downwards and outwards for about five inches between the fibres of the deltoid muscle, and in the line of the bicipital groove. The long head of the biceps muscle was held to one side by an assistant. The capsular ligament was freely divided; the tuberosities of the humerus were rotated into the wound, the muscles attached to the greater divided, and the subscapularis, inserted into the smaller, severed; the head of the bone was next protruded, and the diseased portion, which extended to a little below the anatomical neck, was removed by means of Mr. Butcher's saw. The diseased rim of the glenoid cavity was cut off with a cutting forceps suitable to the purpose. After hæmorrhage had been arrested, which was very trivial, a drainage tube was inserted, one end passing through an opening made at the posterior and inner side of the arm. The wound was brought together by points of interrupted suture. The arm was supported on a pad somewhat resembling Stromeyer's cushion, and water-dressing was applied over the wound.

This treatment resulted in a rapid cure, the patient leaving the hospital completely recovered in December, 1881, five weeks after the operation had been performed, the wound having healed nine days previous to her discharge. I had an opportunity of seeing this woman five months after she left hospital. She had a most useful arm, and the overhand motions were not very deficient, considering the short time that elapsed since she had been operated on. I am since informed that all the motions have steadily improved.

Case II.—A male, aged forty, admitted in March, 1882, suffering from caries of his left shoulder-joint. The record of his case attributes the disease to the swing bar of a plough falling on his shoulder, which



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MR. WHEELER ON EXCISION OF THE HUMERUS AT THE SHOULDER JOINT.

T. D. after Excision of Shoulder Joint.



Forster & Co., Lith., Dublin

MR. WHEELER ON EXCISION OF THE HUMERUS AT THE SHOULDER JOINT.

T. D. three months after operation, showing amount of over-hand motion.

produced acute synovitis, chronic thickening of the synovial capsule, degeneration of the cartilage covering the head of the humerus and the glenoid cavity, and, subsequently, carious disease. On examining this patient a slight fulness was perceptible around the articulation, and on manipulation a distinct crepitus was easily perceivable both by touch and sound. On passing the humerus towards the glenoid cavity there was grating, plainly showing that the cartilages had been destroyed. I operated on this patient in a similar manner to that already described, except that the long tendon of the biceps muscle did not remain intact; it appears to have given way at its origin before the operation; in this case only one side of the glenoid cavity required to be gouged. A portion of the head of the humerus was separated from the shaft of the bone, and was quite loose. The disease extended to about an inch below the tuberosities, which were removed. This patient did not heal rapidly; a sinus remained in the site of the incision which led down to a small portion of the humerus, which was denuded and carious. I enlarged this opening and removed the very small, but diseased, piece of bone; he now rapidly healed, and was discharged from hospital in September, 1882. A month after the wound had completely closed. I have not had an opportunity of seeing this patient since, but my friend, Mr. Pratt, informs me that he has a useful arm, that he is earning his livelihood as a labourer, and that his overhand motions are not defective.

The third case to record is that of the patient brought before this meeting. Not three months since he was discharged from hospital; his history is as follows:—

Case III.—T. D., aged thirty, a strong and, apparently, healthy farmer, was admitted into the city of Dublin Hospital suffering from disease of his left shoulder-joint in September, 1884, recommended by my friend, Dr. Charles Stoney.

In August, 1883, this patient had hurt his shoulder by raising with it the wheel of his cart, which had stuck in a bog. Shortly afterwards his shoulder got stiff, so that he was unable to raise his hand to his head; it was also greatly swollen, but without being painful. Before admission his shoulder-joint had been twice aspirated, with an interval of five days.

On the first occasion about five fluid ounces were removed; on the second occasion about a pint. On his admission the effusion was considerable, and the head of the bone was pushed downwards.

On October 23rd, the patient being anæsthetised, I proceeded to resect his shoulder-joint by a single straight incision, as in the other cases. The capsule was greatly thickened, and on opening it there was a gush of synovial fluid, mixed with blood, and considerably over a pint in quantity. I dissected away the entire capsule, which was very adherent. I removed the head of the bone and a portion of the inferior and external

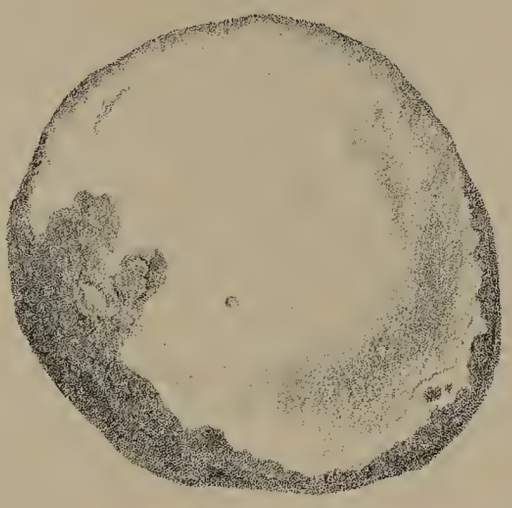
part of the glenoid cavity, also the tip of the acromian process which had been fractured and was carious. The long tendon of the biceps was preserved; all hæmorrhage was controlled; the wound was brought together by means of interrupted suture, a drainage tube having been previously introduced. The arm was placed on a Stromeyer's cushion, and the patient replaced in bed. A few hours after the operation a slight oozing of blood took place, which increased, thereby rendering it necessary to re-open the incision. The hæmorrhage came from a small vessel situated on the posterior and external surface of the bone, and bound down so tightly to the latter as to make it impossible satisfactorily to secure it by ligature; I therefore arrested this bleeding by a compress steeped in Ruspini's styptic.

For the first four days succeeding the operation this man suffered from retention of urine. The shoulder wound healed kindly, and he was ordered to be up on the 8th of November; but on the evening of the 7th he got an attack of inflammation in the veins of his right leg (phlebitis), from which he was not convalescent until the 10th of December. He was discharged from hospital on the 24th. He has excellent use of his arm, including some overhand motion, which he tells me has been daily improving since he left the hospital, not quite three months ago.

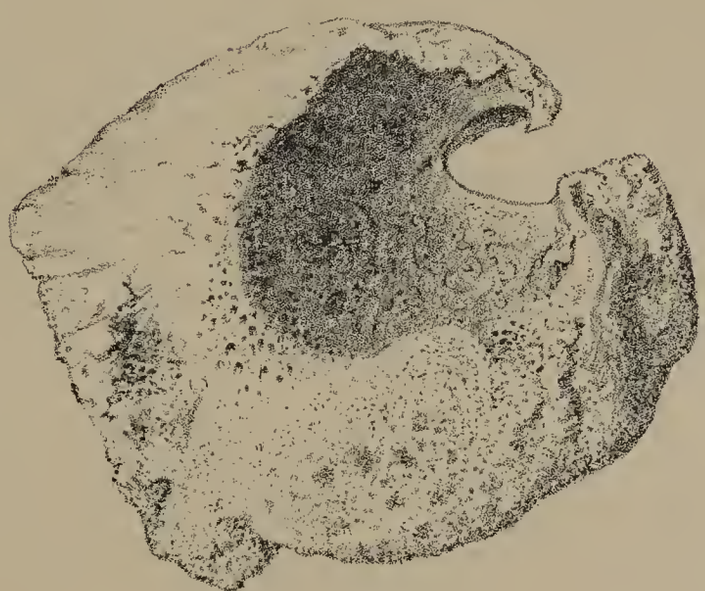
Excision of the shoulder-joint for disease is not so commonly performed as is excision of other articulations, for the simple reason that disease of the articular structures of this joint is not frequent, and when it does occur it often terminates in ankylosis. Again, it is not very uncommon to find that supposed disease of the shoulder-joint is merely caries of the coracoid or acromian process, and that the osseous structures forming the joint are unimpaired; consequently, the removal of such diseased parts will be sufficient; indeed, small sequestra, even in the articulation, may be successfully removed without resecting this joint. But there are other causes, apart from disease, which may demand resection of the scapulo-humeral joint, such as gunshot wounds, old and painful as well as compound dislocations, tumours of the head of the bone not cancerous, compound and comminuted fracture of the articulation.

It makes, however, very little difference for what cause we may have to perform excision of this joint, so long as the treatment be adopted which will prove most beneficial to the patient, and which will endow the hand (to which the other joints of the upper extremity are secondary) with the widest range of usefulness.

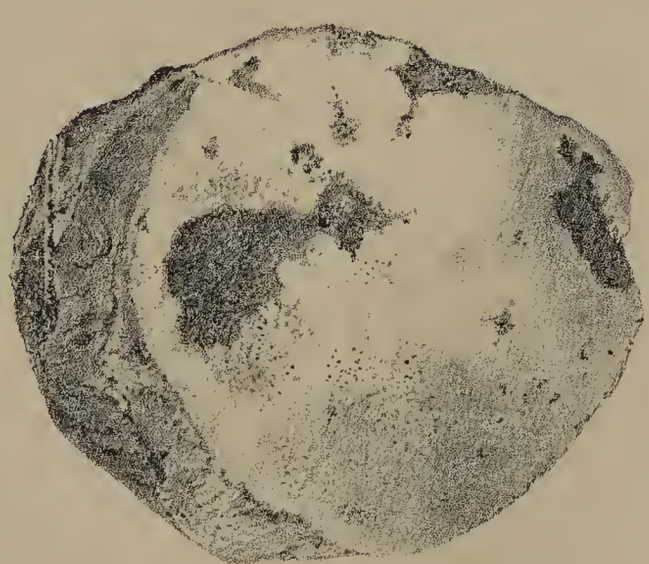
With regard to the incisions for this operation several have



A



B



C



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MR. WHEELER ON EXCISION OF THE HUMERUS AT THE SHOULDER JOINT.

C. Bones Removed in Case No. 3.
Showing Portion of Acromion Process.

A. Bone removed in Case No. 1.

B. Bone removed in Case No 2

been advocated—the T, the V, the inverted ⅂, as well as the longitudinal incision through the deltoid muscle, which, in my opinion, is the one calculated to afford the best results, and which is therefore the one I practise. There are several movements in the shoulder-joint—as rotation, abduction, elevation, adduction, and antero-posterior movements—and if the deltoid be cut across, the power of abduction and elevation must be lost, but if its fibres are merely divided the probability is that their movements may be retained with regard to the saving of the long tendon of the biceps. I strongly advocate that, when possible, this should be preserved. I am aware that in many cases of disease it is destroyed and good results have ensued, but I have seen more useful arms and more extensive motion follow when it has remained intact. I have not found it necessary to continue making the counter-openings for drainage. The position of the arm is undoubtedly away from the side and somewhat forward; this favours the contraction of the wound, and the bonds effecting repair are shorter.

Excision of the shoulder-joint is a favourable operation, but for comprehensive statistics we are limited to the operations performed for gunshot injuries.

Hodges collected 50 cases of excision of the head of the humerus for disease; 8 died and 42 recovered. In 17 out of the 50 the glenoid cavity was operated on, but in 7 out of the 8 fatal cases this cavity required operative procedure.

Out of 115 excisions for disease in civil practice but 21 deaths are recorded—a mortality of 18·2 per cent.; and in military surgery 35·4 per cent.; but there being many circumstances in a campaign which would tend to increase this mortality, it behoves the surgeon to select that period which is most favourable for the operation—the first stage, or that within twenty-four hours, being more favourable than the second stage, which is from the second day until suppuration is established; and the third stage, which is after the occurrence of suppuration, being the next most favourable time to the first.

Plates I. and II. accurately show the condition of Case III. Since the photographs were taken, from which the lithographs have been copied, he has even more overhand motion, and says he works as efficiently at farm work as before he received the injury to his arm.

Plate III. shows the portions of bone removed in the three cases described. The small portion of bone which I mentioned lay loose in Case II. is not shown—it was lost. In Fig. 3 can be seen the acromian process, which was carious, and removed in the third case.

ART. XXIII.—*The Treatment of Stricture by Internal Urethrotomy.*[a]

By WILLIAM THORNLEY STOKER, M.D.; Fellow and Professor of Anatomy, Royal College of Surgeons, Ireland; Surgeon to the Richmond Hospital, and to Swift's Hospital; formerly Surgeon to the City of Dublin Hospital.

THE observations which I have to make on the subject of stricture of the urethra will be narrowed within close limits, as my object is chiefly the advocacy, in suitable cases, of internal urethrotomy; and I will refer to other methods of treatment only so far as may be necessary to throw light upon that with which I propose specially to deal.

In 1871, when I was appointed a surgeon to the City of Dublin Hospital, and for some years afterwards, by far the most usual treatment in this city for the immediate relief of stricture by internal operation was that devised by Perrève, modified by Holt and others, and variously termed "immediate dilatation," "divulsion," or "bursting," according to the view taken by particular surgeons as to the mode in which the instrument acted; a latitude of opinion apparently justified by the cases mentioned by Mr. Richardson in his review of Sir H. Thompson's book in the *Dublin Journal of Medical Science* of August, 1870. In some of these cases, which had occurred in the practice of different surgeons and in which death from other causes followed the operation of immediate dilatation, the mucous membrane was found to have ruptured, while in others it remained untorn. At that time internal urethrotomy was but little practised in the Dublin hospitals, and met with only a modified acceptance in London, for Sir H. Thompson, now one of its strongest advocates, was by no means so general in his commendation of it as he has of late become; but during the period which has elapsed since then it has firmly asserted itself to the exclusion of the other procedure. The change has been a gradual one, and, on that account perhaps, the better established; and although in Ireland we have been somewhat slow in adopting the cutting operation, we have now come to value it as much as could be desired. The reason why we adhered to immediate dilatation may, perhaps, be found in the revulsion of feeling with which surgeons welcomed any proceeding less risky than the earlier forms of urethrotomy, such as that of Stafford, or, perhaps, in the fact that we possessed in the late Mr. Richardson's "tunnel-handled dovetailed" modification

[a] Read before the Surgical Section of the Academy of Medicine, May 22, 1885.

of Holt's dilator, undoubtedly the best and safest instrument that has been devised for this form of treatment, and that the esteem in which we held the late Secretary of the Surgical Society made us slow to relinquish a plan to which he seemed so attached, and for which he claimed so much. Whether the influence of our colleague's opinion was the cause of our somewhat dilatory abandonment of the operation may be a question; but I believe no one cognisant of the general practice of surgeons in Dublin will deny that divulsion has fallen into comparative disuse, and I hope no one will deny that it has been supplanted by a better operation.

In my remarks I need make no lengthened reference to perinæal section, for, in spite of the somewhat heroic advocacy which Syme gave to it, it cannot be regarded as a rival to internal division, and no surgeon would now contemplate performing it, except in cases where urethral fistula existed, or where internal operation had more than once failed. Sir Henry Thompson has made one of the gravest objections to it as an operation of selection for the cure of stricture when he pointed to the inability of an operator to reach a series of strictures through a perinæal wound. To be sure, Syme claimed that when the "master stricture" had been divided the minor contractions soon disappeared, but this is not a belief in which most surgeons will follow him.

Given, then, the case with which we have specially to deal—a well-established organic stricture—the question is, how may it best be treated by surgical means so as to secure the greatest immunity from return with the least possible risk from the operation? If it be tolerably recent, and if time and circumstances permit, gradual dilatation may be tried, and will probably be successful, if only for a limited period. We meet, however, many cases of recent stricture where frequent catheterisation will not be borne, or, even if it be, where the circumstances of the patient demand speedy relief, and in these no hesitation need be felt in recommending the division of the contracted portion of the urethra without delay. Nay more, in spite of the advocacy which gradual dilatation, when carried to an extreme degree, has of late years received, I am so convinced of its tediousness and uncertainty, and of the speed with which the contraction re-establishes itself as compared with those cases treated by division, that I would not hesitate to divide any stricture, however recent, provided it were confirmed, and either unsuited to the gradual treatment or disposed to recontract after it, and that the kidneys were free from disease—any albuminuric condition in special being

a good reason for avoiding, if possible, cutting operations, and trusting to the more temporary relief by gradual dilatation. Let me not be understood as advocating the relinquishment of gradual dilatation in all cases, but as proposing to limit its use considerably.

The bulk of cases, however, for which we are consulted are such as to save us any hesitation on the point of their recent occurrence. They are generally old, well-established, and have been thoroughly "cathetered," and in these—putting aside, for the reasons indicated, the method of gradual dilatation, unless forced upon us by the patient's dread of an operation, or by some exceptional circumstance—we have to decide between "divulsion" and "division," and, if we select the latter, between a division from behind forwards, after the method of Civiale, or from before backwards, after that of Maisonneuve. For myself I have relinquished the operation of bursting stricture in favour of that of dividing it, and have most confidence in the method of Maisonneuve.

In instances where an urinary fistula complicates the existence of the stricture, it may be well to inquire if the minor procedure of an internal division should be attempted before undertaking a perinæal section. Observation of such cases leads me to believe that if the fistulæ are old-standing, or the perinæum much riddled by them, nothing short of an external operation is likely to succeed; but if, on the other hand, the sinus is recent, solitary, and the perinæal tissues tolerably healthy, an internal urethrotomy should be tried as a primary measure. In most of the cases, however, with which we have to deal, this troublesome complication is not present, and our choice of operation is consequently limited.

In the early years of practice I performed the operation of immediate dilatation frequently, and the best expression of my opinion concerning it is found in the fact that I have completely relinquished it. I used Richardson's dilator altogether eighteen times, and have often seen it employed in the practice of other surgeons. Although I cannot say that I have ever found any grave effects follow its employment in my own cases, sufficient reasons exist for abandoning it. On the whole, it has been but little more provocative of danger or disturbance than Maisonneuve's operation; there are, however, other arguments against its use. It requires the stricture to be sufficiently dilated to permit the passage of at least a No. 3 or 4 bougie—a matter in itself often involving considerable delay or inconvenience; and although so high an authority as Sir H. Thompson has lately, when arguing in favour of internal urethrotomy being performed after the manner of Civiale, from behind

forwards, stated that he considers such a dilatation to be a matter offering no impediment, I must take leave to differ with him; for, even in the most skilful hands, the enlargement of a tight stricture to this dimension is often tedious and troublesome. If, moreover, a surgeon believes that division of a stricture is, at least, as safe a process as its rupture, he will at once concede that the quickest method is the best, and that the delay necessary for divulsion is a strong objection to it as compared with internal urethrotomy, even if no other existed.

But setting aside this objection, and others which I have not gathered from my own practice—such as the inflammatory troubles some surgeons have found to follow divulsions, or the question whether the mucous membrane is stretched or torn—there is the much more radical matter that a return to the strictured condition is a mere matter of time. It is true that this objection may obtain to any operation, and that all surgeons are agreed about the uncertainty as to recontraction after even the best devised methods; yet there can be no doubt that return of stricture is as much the rule after divulsion as it is the exception after urethrotomy. This cannot be a matter for surprise; for if the operation produces, as is sometimes claimed for it, a dilatation without rupture, what more likely than a recontraction of the tissue; and if, on the other hand, it bursts the stricture, as it does often, if not always, it is not difficult to understand that the copious lymph exudation following so rude a process must result in subsequent narrowing of the passage. I have found contraction to become re-established at very various and often very short periods. A few cases have been lost sight of before any considerable contraction had taken place, but in the majority it has shown itself in periods varying from a few weeks to a few years. In nearly every instance where a stricture has been burst it will be found, on careful measurement, that, in a space of time to be counted by days, the passage which, immediately following the operation, admitted, say, No. 12 or 14, will not easily take more than 10 or 12. Although this is not a return to an actually strictured condition, it is sufficiently indicative of what may be expected later on. In fine, so unfavourable has been my observation as to the permanency of relief afforded by the method of divulsion, that it has induced me to set aside a proceeding of such unsatisfactory result.

Of late years I have confined my treatment of those cases of stricture suited for internal operation to the method of division by a cutting instrument, and the performance of my twenty-fifth case

of Maisonneuve's operation without any death or instance of extreme danger is my reason for making this communication, and for repeating the praises of the treatment which have been so often uttered. It is satisfactory to find that the great bulk of surgeons are agreed as to the advantages, in suitable cases, of internal urethrotomy over other methods of treatment, and that the leaders of the profession, both at home and abroad, wage their war over the minor matter of the particular form of operation to be selected. Thus, while many men of the highest eminence warmly advocate the operation done after the fashion of Maisonneuve, from before backwards, we find Sir H. Thompson, the person in England of the largest experience, advocating the method of Civiale, and cutting from the vesical side of the stricture. In the admirable lectures he delivered before the College of Surgeons last year, he entered at length into his reasons for choosing this operation; but it is difficult to follow him on this point in his arguments or his choice, for I hold that with Maisonneuve's instrument a stricture can be divided with at least as much certainty that it has been cut thoroughly as with any instrument devised for cutting from behind forwards; and I refuse to recognise the truth of this author's remark—that the system of Maisonneuve "is the product of a machine, the other is the handicraft of an artist." Sir Henry Thompson's aphorism, "if you cut at all, cut all," is a part of his teaching no one will deny the wisdom of; but I am satisfied it can be obeyed most thoroughly with the instrument I am in the habit of using. As Mr. Berkeley Hill has said, the great objection to most urethrotomes is the difficulty of using them so as to effect a thorough division of the fibrous tissue, on account of the want of means of fixing the stricture in the perinæum. The method of Maisonneuve is more free from this drawback than any other, as the firm hold which can be taken of the penis during its use, and the fixation of the stricture against the edge of the knife thus obtained, is an argument in favour of the operation which is not to be overlooked.

In addition to the foregoing reasons two others may be adduced in favour of Maisonneuve's instrument. One is that the pliant nature of the steel directing rod allows the contrivance, when the surgeon is pushing back the knife, to adapt itself somewhat to the position of the passage, and that while it has sufficient rigidity and resistance to enable him to feel what he is doing, it saves the tissues neighbouring on the corpus spongiosum from unnecessary division. The other is the well-whipped subject of the size—No. 5 or 6—to which a stricture must be dilated before Civiale's instrument can be used;

and of this it is enough to say that, in spite of the high authority of the surgeon already quoted, it is, *ceteris paribus*, of advantage, and often of the greatest moment, to be able to operate at once on a tight stricture, as Maisonneuve's instrument permits. For instance, I lately did the operation, with complete success, on a gentleman suffering from acute retention, who had lacerated his urethra in his efforts to pass a small catheter, who was in a state of high fever, and who could not, before operation, bear to retain even the smallest instrument without rigors and other alarming symptoms. I can now look back over about twelve years on the cases operated by Maisonneuve's method, and, without entering into a wearying detail, I may say generally that the results have given me great satisfaction. I have never had a death, nor have I seen one except in a case under the care of a colleague, where the operation was done on a man in advanced phthisis, who had sustained a rupture of his urethra when straining to pass water through a tight stricture. This statement has all the more weight because the operation is one in favour with my colleagues, and very frequently performed in the Richmond Hospital.

I have never had cause for much anxiety concerning a case except on a few occasions—one, the instance just mentioned, in which very troublesome hæmorrhage took place, and required the retention of a large catheter, to the temporary detriment of the patient; and the others, five in number, where some troublesome rigors and feverish symptoms showed themselves after operation. In two of these the subjects were addicted to drink; and in all a full-sized catheter had been introduced and retained in the urethra—a practice which, unless demanded by hæmorrhage, I have now abandoned. Such of my patients as have been kept in view remain in a favourable condition, and will, no doubt, continue to do so if they follow the rule laid down for them, as to the occasional passage of an instrument.

In none of the eight cases I have operated on in private has any return of the stricture as yet showed itself; they have been cut at periods dating back from six months to ten years, and were all tight, old-standing strictures, with a good deal of bladder trouble. In one instance the stricture had existed for thirty years; the bladder was greatly hypertrophied, and the gentleman had not passed a day for twenty years without one or more catheterisations. He can now eject his urine in a stream, which is a source of pleasure and pride to him, and enjoys a comfort to which he had been a stranger.

My hospital cases, which are dotted over the last twelve years, have, as a rule, not been of such old standing, and have not all been kept in sight; but, as the patients have always been instructed to return on the least suspicion of a recontraction, I conclude that such as have not returned are free from stricture. Of those kept in view (about ten in number) only one has had a return. He is an intemperate man, of about forty years of age, who was cut four years ago, and in whom I then passed a No. 14 bougie. At times, when he is sober, he now passes a fair stream, and a No. 6 or 7 can easily be introduced. At periods of intemperance he has, as might be expected, considerable difficulty in voiding urine, due to the urethral congestion which is then present.

As regards the method of operation, reference need be made only to such matters as are moot points, and about which surgeons differ. The preparation of the patient is, of course, of importance. In addition to attending to the state of the urine, and, if possible, securing an acid or, at worst, a neutral reaction, the matter of most weight is to give due rest to the parts by keeping the person in bed for a few days. In men otherwise healthy, or if called by necessity, however, no hesitation need exist in dispensing with this preliminary, and I have occasionally operated in my own study without any preparation except the previous clearance of the bowels.

An anæsthetic is usually administered; this is not necessary; in most cases the operation gives very little pain, not more than the introduction of a catheter for the first time into a tender urethra. The callous condition which the urethra has usually assumed is explained by the fact that it has in these patients been the seat of long-standing inflammation, and has lost its natural sensibility. Twice, in the cases of persons who were very nervous, and pressed for the use of an anæsthetic, I consented, and found nitrous oxide sufficient and satisfactory. The director was introduced before the gas was administered, and the stricture readily cut before its effects had passed off.

The size of the knife to be selected is an important point, and should be determined by previous careful measurement of the calibre of the urethra. It is particularly necessary to avoid the fallacy of being guided by the size of the meatus, which, if small, should be divided, and a careful exploration of the passage made, so as to determine the number and size of any strictures that exist. Failing the determination of the normal size of the canal by bougies or sounds, it is best to form your opinion by the use of Otis's rule, and to be guided by the circumferential measurement of the penis. In

practice I have found generally that if I erred it was in using too small a knife, and now I usually employ the largest blade ordinarily supplied with Maisonneuve's instrument.

The surgeon has next to decide whether he will incise the floor or roof of the urethra. Differing from Sir H. Thompson, and agreeing with Professor Otis on this point, I prefer to make my cut on the pubic wall, and for this purpose use that form of Maisonneuve's urethrotome which carries the blade along its concavity. There is but one reason to be adduced for the inferior incision—that the greater thickness of that portion of the corpus spongiosum lying below the urethra renders it less likely that the knife will go completely through it, and, entering neighbouring tissues, produce extravasation. Against this are to be set the facts relied on by Otis, that the superior wall is less vascular than the floor, and its incision therefore less likely to produce troublesome hæmorrhage; and, again, that as the tissues involved in the stricture are much thicker below the urethra than above it, an incision sufficiently extensive to divide it completely is more likely to cut into neighbouring parts than if made above. Besides, it seems that an incision made through the roof of the urethra into comparatively healthy tissue is less likely to be followed by contraction than when carried through the more unhealthy structures below, infiltrated, as they are, by lymph. The larger amount of erectile tissue situated beneath, with its freer condition, and the consequeut ease with which its infiltration is effected, together with the greater liability to disease generally found to exist on the inferior as compared with the superior aspects of tubes and cavities accounts for the frequency with which inflammatory trouble limits itself to the floor of the urethra. The stricture having been thoroughly divided by pushing the knife backwards through it, more than once if necessary, until all sense of resistance ceases, the instrument is withdrawn, and a full-sized catheter—generally 14 or 16—passed into the bladder.

Most surgeons tie in the instrument and leave it for twenty-four or forty-eight hours, after which it is withdrawn and passed daily at first, and then at longer intervals. From this practice I am compelled to differ; most of the troubles I have seen following the operation have resulted from leaving in the catheter, and I have relinquished this habit, and, having passed it at the conclusion of the operation, withdraw it. Since adopting this plan I have found much less constitutional and local trouble follow the operation.

In favour of the retention of a catheter in all cases after the operation, it is urged that it lessens the likelihood of extravasation.

This is more than doubtful, and I think that those who have seen the way in which the outside of a catheter acts as a conductor of urine, and in which that fluid will escape along the side of even a full-sized instrument, will agree that it is as likely to help extravasation as to prevent it. Of course, if hæmorrhage occurs a large catheter should be tied in. Commencing twenty-four hours subsequent to operation, the catheter should be passed daily for about a week, after which the patient may be taught to introduce it himself. I generally direct him to use it every second day for a month, and afterwards to pass a No. 12 or 14 about once a week for the rest of his life.

This last precaution is of the greatest moment; it generally will prevent subsequent contraction, or will, at all events, give the earliest warning of it. All surgeons of experience agree that there is no certain immunity from the return of any organic stricture, and this cannot be too strongly taught to our patients, and used to impress on them the necessity for the periodic use of a catheter or bougie. Let a man use one every Saturday night as regularly as he winds up the clock, and he will probably keep the vital machine in as good order as the mechanical one. The most suitable instrument is a large olivary bougie—14 or 16 if possible.[a] A bougie is better than a catheter, because it lasts longer and is more easily kept clean.

The amount of preference which has of late years been given to internal urethrotomy, and the way it is beating other operations out of the field, is one of the reasons which has induced me to make this communication, and to endeavour, by a pebble dropped by the road, to define an advance in treatment. It is quite true that many surgeons in Dublin practise this operation in all possible cases, but very little has been written by them about it; and, as we mark the epochs of surgery more by the pen than the knife, it is, perhaps, not out of place that I should record what I believe to be the opinion of most of us on the subject.

It is, then, not only to report my own experience in the treatment of stricture that I have brought the subject under the notice of the Academy, and recorded my opinions on certain matters of detail about which a difference exists among surgeons. The points about which others may disagree with me, are:—

1. The superiority of the operation of internal urethrotomy over any form of dilatation.

2. The advantage of the method of Maisonneuve over that of Civiale and his followers; and

3. Certain details connected with the method I have advocated,

[a] All sizes of catheters referred to are on the English scale.

such as—(*a*) completeness of division; (*b*) the disuse of anæsthetics; (*c*) the position of the incision; and (*d*) the non-retention of the catheter in the urethra subsequent to operation—the latter, in particular, being a matter on which I place much weight, to which I attribute the freedom of my later cases from inflammatory and other troubles, and about which I am most at variance with the general practice of other surgeons.

ART. XXIV.—*Some Points in the Diagnosis of Pelvic Hæmatocele.*[a]

By WILLIAM J. SMYLY, M.D. Univ. Dubl.; F.K.Q.C.P.I.; Gynæcologist to the City of Dublin Hospital.

THE term "pelvic hæmatocele" is generally understood to signify a tumour formed by the extravasation of blood, either into the peritoneal cavity or into the areolar tissue beneath; but by some authors it is restricted, and I think with advantage, to the intra-peritoneal effusions, the term "pelvic hæmatoma" being applied to all other forms.

Although nearly forty years have elapsed since this affection was accurately described, and though in that space of time an enormous literature has accumulated, yet we are not, even at the present moment, in a position to state whether its occurrence be frequent or the reverse. I have been informed by a gynæcologist of large experience, that he had scarcely ever met with a case which he could pronounce, with absolute certainty, to be one of hæmatocele; whilst in the practice of another they appear to occur with remarkable frequency. This divergence of experience also pervades the literature of the subject. Thus, Hugenberger met with but two cases amongst 3,801 patients, and Scanzoni only eight during twenty-eight years' practice. In the Women's Hospital, New York, there were but four cases in twenty-five years, and in Dr. Emmet's private hospital but three. On the other hand, Seyfert, of Prague, reported 60 cases amongst 1,272 patients—equal to five per cent.; and Olshausen almost as large a proportion—namely, 29 out of 764. Dr. Emmet thinks that this varied experience "has been due to different classes of patients, and the different circumstances under which they were treated," and that physicians visiting patients at their own homes will see a larger proportion of cases than those whose practice is confined chiefly to the office, or to the wards of a hospital. The following statement of Bandl's,

[a] Read before the Obstetrical Section of the Academy of Medicine in Ireland on Friday, May 8, 1885.

however, suggests another cause. He says: "Out of 1,500 out-patients, examined during the last two years, we have been able to *demonstrate* retro-uterine hæmatocele in five, but in a much larger number of cases it seemed probable that tumours found posterior to the uterus had originated in blood extravasation." It appears probable that the inclusion, or exclusion, of such uncertain cases, partly accounts for the difference in statistics, and shows that, in spite of the advances made, accuracy in diagnosis is still, in a certain proportion of such cases, impossible. We must, therefore, hail with satisfaction any addition to our means of diagnosis, and put them to the test of practical experience. In the July number of the *Dublin Journal of Medical Science*, in 1884, I drew attention to some very interesting observations by Dr. Dick, of Berne, upon the diagnostic value of urobilin in the tissues and urine of patients suffering from extravasation of blood into the pelvic tissues. The application of the discoveries of Jaffé, Maly, Gerhardt, Bergmann, and others, to gynæcology, was original on the part of Dr. Dick, and have not, so far as I am aware, been confirmed by others. Urobilin is an amorphous, reddish-brown powder, possessing feebly acid characters, slightly soluble in water, but freely so in alcohol and alkaline solutions. Dilute alkaline solutions are the colour of ordinary urine, but on the addition of an acid become red. The addition of a few drops of chloride of zinc to an ammoniacal solution of the pigment, produces a most characteristic green fluorescence. Another valuable test is a remarkable absorption band between the green and blue in the spectrum.

The appearance of urine, containing an excess of this colouring matter, is so peculiar that it at once suggests the idea of something abnormal in its contents. It varies from a light to a dark brown. In many cases there is a deposit of pigment in the skin and conjunctivæ, causing a brownish discoloration, which has been called bilinicterus to distinguish it from ordinary jaundice. In three cases, reported by Dr. Dick, both the bilinicterus and urobilinuria were present. In the first two they were observed in patients in whom the extravasation of blood had been already diagnosticated, and were evidently the result of it; but in the third case it was their presence which led to the diagnosis of hæmatocele. This patient, aged thirty-five, had three children and one abortion, after which she suffered from pelvic inflammation. Having over-exerted herself at the menstrual period, she was suddenly seized with pains in the abdomen, which continued long after, but the flow did not

come on. Dr. Dick first saw the case (in consultation) about five weeks after this. On examination, he found in Douglas' pouch a doughy, irregular tumour, which had displaced the uterus forwards. The skin was markedly yellow, and the urine, which was of a deep coffee-brown colour, contained a large quantity of urobilin. Not having seen the case from the commencement, and the history being indefinite, a certain diagnosis was not possible. However, from the large quantity of urobilin in the urine, and from the colour of the skin, he came to the conclusion that it was a hæmatocele. The tumour gradually reduced in size, and the icterus and urobilin also diminished. At the end of a month the tumour was aspirated, and dark brown blood was drawn off. For four days she went on well; then, however, the menstrual flow came on, attended by increased pains in the abdomen and enlargement of the tumour. Four days after this the icterus returned, and urobilin was again found in the urine. The tumour was again aspirated and a quantity of blood drawn off. After this, however, it rapidly increased in size, until it reached to the umbilicus, but this time there was neither icterus nor urobilinuria. As a rupture of the sac seemed to be imminent, an incision was made into it through the vagina, and a great quantity of putrid matter evacuated. The examining finger passed into a cavity, the walls of which were covered with old blood-clots. After this cavity had been irrigated with a 3 per cent. solution of carbolic acid, and a drainage-tube introduced, the temperature rapidly fell. In this case it was certainly most remarkable that, when the tumour contained blood, there was urobilin in the urine ; as the tumour diminished, so did the amount of urobilin ; when it re-filled, the pigment re-appeared, both in the urine and in the skin ; but on the third occasion, when it became distended with inflammatory and putrid fluids, there was neither icterus nor urobilinuria.

The following case, which I have had under observation, may prove of interest in this connexion. For the notes I am indebted to Mr. Poole, my clinical clerk:—

Case.—Mary C., aged thirty-one years, was admitted into the City of Dublin Hospital on the 15th of last September. She had had eleven children and one miscarriage. Her youngest child was sixteen months old, and menstruation had been regular, up to the 9th of August, when she missed a period, and supposed herself to be pregnant. A fortnight after this she was seized with violent "cramps" in the hypogastric region, and retching, which continued for two days, after which there

was a remission. Three days after she was again seized with such violent paroxysms of pain, that she rolled about the floor in agony. The abdomen became tympanitic and exquisitely tender; and there was much pain and difficulty in emptying the bladder and rectum, besides which she complained of a dreadful "bearing-down" sensation.

Condition on admission.—The patient presented a peculiar brownish yellow tint. Her pulse was 100 per minute, and her temperature normal. The lower portion of the abdomen was tender to the touch, but a tumour, which was dull upon percussion, and which reached nearly to the umbilicus, could easily be distinguished. This was discovered upon bi-manual examination to be the uterus, and the sound passed into it to a depth of three inches. It had been displaced upwards and forwards by a tumour, which occupied the space between it and the rectum, and which bulged the posterior fornix downwards into the vagina, almost to the vulvar orifice. The surface of this tumour felt smooth, to the touch, soft and elastic.

The night after this examination she suffered from crampy pains, which she said were like those attending a miscarriage, and some clots were expelled, but were unfortunately thrown out before they could be examined.

Next day the urine was drawn off with a catheter, but as it did not present anything abnormal in appearance, I thought it would be useless to have it tested for urobilin; the icterus, too, had faded considerably, and in two or three days more had entirely disappeared. From that time she made a rapid recovery; the tumour was absorbed all but a small lump about as large as a walnut, which can still be felt in Douglas' space, and the uterus returned to its normal position.

The presence of the icterus in this case was well marked, and had I been fortunate enough to have found the urobilin in the urine also, it would have been a valuable confirmation of Dr. Dick's observations. However, as it is, I hope the case will be of interest to the members of the Academy, and that, should examples of this affection come under their care, as no doubt they will, at an earlier stage they may detect these valuable symptoms.

That the case was one of hæmatocele I have no doubt—1st, from the history; 2nd, from the physical character of the tumour; and 3rd, from the rapidity of its absorption. That the extravasation was intra-peritoneal I gathered from the history—the patient being a married woman who had borne children, and who had not menstruated for upwards of six weeks before the accident—the physical characters of the tumour bulging downwards into the vagina, and its median position. Hæmatoma is, on the other hand, said to

occur more frequently during menstruation. It is situated laterally in the pelvis, and often presents a flat or irregular surface towards the vagina, conforming to the base of the broad ligament.

ART. XXV.—*Forcible Fracture and Straightening of the Bones by Manipulation for the Cure of Bowed Legs caused by Rickets.* By L. HEPENSTAL ORMSBY, F.R.C.S.; M.D. Univ. Dubl.; Lecturer on Clinical and Operative Surgery, and Surgeon to the Meath Hospital and County Dublin Infirmary; Surgeon to the Children's Hospital, Dublin.

I. METHOD OF STRAIGHTENING THE BONES IN RICKETY CHILDREN BY FORCIBLE MANIPULATION AND FRACTURE.

II. THE CONDITION AND HISTORY OF TWENTY-FIVE DOUBLE CASES OF FORCIBLE FRACTURE WITH THE SUBSEQUENT RESULTS.

IN the April number of this Journal I drew attention to the treatment by osteotomy of a most common distortion of the lower limbs named genu valgum or knock knees. In the present paper I wish to describe a method of treatment I have extensively adopted with marked success for the cure of bowed legs—another equally unsightly deformity of the lower extremities.

Deformities of the lower limbs very frequently occur as early symptoms of that peculiar form of constitutional disease termed rickets or rachitis—a term which is derived from ῥάχις, the *spine*, as it was thought that distortions occurred in that situation more frequently than in any other part of the body. Glisson, about the year 1651, studied the subject very carefully, and the term rachitis is believed to have been introduced by him. Others contend that it is derived from the old French *riquet*, or else from the German *Rücken*. In this paper I merely intend to draw attention to the treatment of a single symptom of this disease—namely, the occurrence of bowed legs. I would refer for a more extensive account of the subject to the very admirable lectures[a] of Sir William Jenner, Bart., on the pathology and treatment of this affection. The treatment depends very much on the time when, and the stage at which, the deformity is first recognised.

The constitutional treatment of rickets is nearly altogether *hygienic*. The patient should be allowed to breathe pure air,

[a] Medical Times and Gazette. Vol. I. March 17, 1860. Page 259, *et seq.*

removal to a more healthy and open locality should be insisted on, and suitable and nourishing diet should be provided. The further medical treatment of a given case depends on the symptoms of the affection which are most apparent. If we have to deal merely with a delicate and debilitated frame—tonics, and removal to a sea-side residence, with sea bathing, are of use. In winter sea water, or Tidman's sea salt, used freely in the form of a bath, and extensive friction with a rough towel over the whole of the cutaneous surface, should be recommended. Flannels should be worn next the skin; any gastric derangement should be treated at once. The state of all the secretions is to be observed; the bowels should be made to act regularly. Any diarrhœa that may arise should be checked, not so much by irritating astringent medicine, but rather by a change of diet, which will frequently be quite sufficient. The exhibition of the salts of lime, together with the syrup of the iodide or phosphate of iron, in combination with cod-liver oil, is of use. Few cases will fail to be improved under such a persistent plan of treatment, based on hygienic and dietetic rules.

I now come to the more immediate subject of my paper—the surgical treatment, by forcible fracture, of aggravated cases of rickets, producing bowed legs, which resist all constitutional and mechanical local treatment.

Bowed or bandy-legs are so common that they hardly need description, being met with in weak, delicate, rickety children, usually between the ages of two and five years. The direction and position of the curve vary considerably. First we notice the bowing *outwards*, commencing at the upper part of the tibia and fibula, the greatest convexity taking place about the centre of the shaft of these bones, or a little below this point. Next in frequency we have the bowing *outwards* and *forwards*, so that the tibiæ are found flattened and compressed from side to side, the fibulæ partaking, as a rule, in the same curve. Where the entire tibia is bent anteriorly or antero-laterally, the tendo Achillis is very tense and shortened, and has to be divided. Thirdly, the tibiæ may be bowed *inwards*. The simplest and commonest variety, however, is where both bones are curved outwards alone—a deformity which may affect both legs or only one. This bowing is generally recognised a short time after the child commences to walk, and goes on increasing until it assumes a very aggravated form. The treatment for such cases resolves itself into the following, and depends on the stage and degree of the distortion:—

First. Medical, hygienic, and dietetic treatment in the first stage.

Second. Splints—wooden, steel, or leather—properly adjusted and padded, in the second stage.

Third. Forcible fracture by manipulation. Osteoclasy or Osteotomy in the third stage.

In the early stages of the distortion, the first two plans of treatment are applicable; such as removing the body-weight of the child and keeping him off his feet, and improving his hygienic condition and general health, with the use of suitable lateral splints or apparatus.

In the third stage, however, when the curvature is thoroughly confirmed and permanent, and the bones have become consolidated and hardened, so that they are much denser than in health, treatment of this description is useless; and to remedy the deformity, one of the three following methods must be adopted, viz.:—1. Forcible fracture by manipulation; 2. Osteoclasy; 3. Osteotomy.

I. *Forcible fracture* is a plan I have very extensively adopted for some years, in cases where the bones are bowed outwards alone, or outwards and forwards. This treatment has also been carried out by my friend, Mr. Howard Marsh, of St. Bartholomew's Hospital.[a] The ages most applicable for this line of treatment are the second and third years of life; but age has not so much to say to the matter as the condition and brittleness of the bones; for it is remarked that in some patients the bones are very soft, and in others, of the same age, excessively hard and unyielding; so that with any degree of justifiable force, one is unable to bend or break the bones. When I fail with the force of my two hands, I invariably succeed with the pressure of my knee applied to the limb; but should I fail with the force of my knee, I would deem it unadvisable to persevere, and I would then have recourse to osteotomy for the rectification of the deformity.

I have performed the operation of forcible fracture hundreds of times, and I never met with one single complication. I never produced a compound fracture; and I never failed, where I effected fracture, to rectify or greatly lessen the distortion. Some surgeons have doubted my muscular power of arms to effect fracture of the bones; I do not, however, think it requires any extraordinary strength; but the hands must firmly grasp the limb close together, so as to produce fracture in the exact position required.

[a] Vide Notes on the Surgery of Children. By Howard Marsh, St. Bartholomew's Hospital Reports, 1870.

Description of the Operation.—The child being placed fully under the influence of ether, or other anæsthetic, I grasp the bowed leg firmly, with my two hands, above the ankle and below the knee, keeping my hands close together, but not touching, and with a sudden jerk laterally, using force in the opposite direction with the pressure of each hand, I am able to fracture the bones. The breakage is easily recognised by the snap, audible to the operator and the by-standers. Sometimes the bones bend rather than break, being elastic; and if not broken at once, return to their abnormal shape when the pressure is removed. I would, therefore, prefer, in all cases, for the bone to snap; and by continuing the bending of the bone, fracture will invariably occur. When the audible snap is heard, the limb can be set in any position desired; and so as to correct more effectively the deformity, I bend the limb more than is necessary, in the opposite direction, before putting it up in two lateral wooden or metallic splints, well padded over bony joints to avoid pressure-sores, and then carefully bandage the limb. The further treatment of the case is the same as in any simple fracture in children.

In three weeks to one month I remove the splints and allow the little patients to get up and walk about, on straight limbs, which would take months and months of instrumental and mechanical treatment to effect. Where the case is double, I always perform fracture of both legs at one operation, the shock being quite the same.

If the pressure of my hands and arms is not sufficient, I then use the pressure of my knee, placing the child's limb across it. With the knee, however, the surgeon cannot be as certain to effect fracture at the exact position he wishes to break the bone. The moment the bone is heard giving way, which is known by an audible crack, the pressure should be at once discontinued, for to continue it might produce a compound fracture. Also, the hands should be kept close together when grasping the limb, and away from the ankle and knee-joints.

This treatment of fracture by manipulative force for bowed legs, when it can be performed without much difficulty, is, in my opinion, safe, rapid, and efficacious, and superior to osteoclasy or osteotomy; the former requires a very cumbersome apparatus, called an osteoclast, in which to fix the limb before carrying out the fracture, and the pressure of which, in many cases, produces extensive bruising of the skin and muscles. It is also superior to osteotomy, inas-

much as it saves the patient the danger of a compound fracture, the skin and soft parts being unbroken.

The following are a few selected cases illustrating this mode of treatment :—

Case I.—Wm. T. H., aged four years, son of a soldier in the Scots Greys, stationed in Longford barracks, admitted to Children's Hospital, Dublin, July 31st, 1879, suffering from double bow-legs, caused by rickets. *Operation*, assisted by Dr. Stewart Woodhouse.—Both legs fractured August, 1879, under ether. Treatment lasted one month; result perfect. Photographs taken before and after operation. Figs. 1 and 2.

Case II.—John C., aged three and a half years, son of a soldier in Ship-street barracks, Dublin, admitted to Children's Hospital, October 21st, 1879, suffering from double bow-legs of a very aggravated form. Constitutional evidence of rickets not very marked. *Operation.*—Forcible fracture performed on both legs, on November 14th, 1879, under ether; assisted by Dr. S. Woodhouse; result good.

Case III.—John E., aged four years, admitted to Children's Hospital, April 28th, 1881. Operation performed June 19th, 1881, assisted by Dr. Stewart Woodhouse. Patient etherised, and both legs forcibly fractured by manipulation. Put up in lateral splints, which were kept on for four weeks; constantly changed, so as to avoid pressure-sores. Child discharged June 19th, 1881, with two perfectly straight limbs.

Case IV.—John R., aged three years, admitted to the Children's Hospital, Dublin, May 7th, 1881, suffering from double bow-legs. Splints at first applied, and as no improvement appeared to take place in the limbs, operation of forcible fracture by manipulation was performed, under ether, on both legs, on June 27th, 1881, assisted by Dr. Stewart Woodhouse. Lateral metallic splints applied, which were kept on for one month, and the child was discharged on August 11th, 1881, with straight limbs.

Case V.—John K., aged two years, a weak, delicate child, was admitted to the Children's Hospital, Dublin, suffering from double bow-legs, on June 16th, 1881. Operation performed on June 17th. Both legs fractured, under ether, assisted by Dr. Stewart Woodhouse, by manipulative force, which was found quite sufficient. Limbs placed in two lateral, well-padded metallic splints, and child recovered, with two straight limbs. Discharged on July 10th, 1881.

Case VI.—Anne C., aged three years, admitted to Children's Hospital, July 2nd, suffering from double bow-legs, very aggravated. Both legs

fractured by manipulative force, under ether, July 13th, 1881, assisted by Dr. Stewart Woodhouse. Child made a rapid recovery, and was discharged, with two perfectly straight limbs.

Case VII.—John F., aged two years, was admitted into the Children's Hospital, Dublin, December 9th, 1881, suffering from double bow-legs; very delicate, badly-nourished child. Both legs fractured by manipulative force, under ether, assisted by Dr. Stewart Woodhouse, December 14th, 1881. Placed in lateral splints, and child made a good recovery; allowed to walk about, with straight limbs, five weeks after date of operation.

Case VIII.—John H., aged eight years, admitted to Children's Hospital, Dublin, January 20th, 1882, suffering from double-bowed legs. Both legs fractured by manipulative force (knee used in this case), under ether, assisted by Dr. Stewart Woodhouse. Limbs placed in straight position, treated with lateral splints, and patient made a good recovery.

Case IX.—Alfred O'B., aged two years, admitted to Children's Hospital, Dublin, June 21st, 1881, suffering from double-bowed legs. Both legs fractured by manipulative force, under ether, assisted by Dr. Stewart Woodhouse, June 27th, 1881. Patient made a rapid and satisfactory recovery; treated with lateral splints.

Case X.—Matilda H., aged three years, admitted into Children's Hospital, March 29th, 1882, suffering from double-bowed legs; left leg more bowed than the other. Splints and mechanical appliances employed at first. Parrish's chemical food and good nourishment ordered. No apparent improvement took place; I, therefore, placed the child under ether, on May 12th, 1882, assisted by Dr. Stewart Woodhouse, and fractured the left leg by manipulative force. Patient made a good and rapid recovery, and was discharged on June 23rd, 1882.

Case XI.—Ellen M., aged two years, admitted to Children's Hospital, Dublin, June 16th, 1882, suffering from double-bowed legs. Both legs fractured by manipulative force, on June 23rd, 1882. Child treated as before, with a most satisfactory result; deformity completely rectified; discharged on August 5th, 1882.

Case XII.—Thomas W., aged three years, admitted to Children's Hospital, Dublin, suffering from double-bowed legs, April 23rd, 1883. Both legs fractured by manipulative force, under ether, assisted by Dr. Stewart Woodhouse, May 12th, 1883. Case made a rapid and good recovery, without any complication.

Case XIII.—Rosamond W., aged four years, admitted into Children's Hospital, Dublin, July 14th, 1883, suffering from double-bowed legs, from rickets. Both legs fractured, July 24th, 1883, assisted by Dr.

Fig. 1.



BEFORE OPERATION.

Fig. 2.



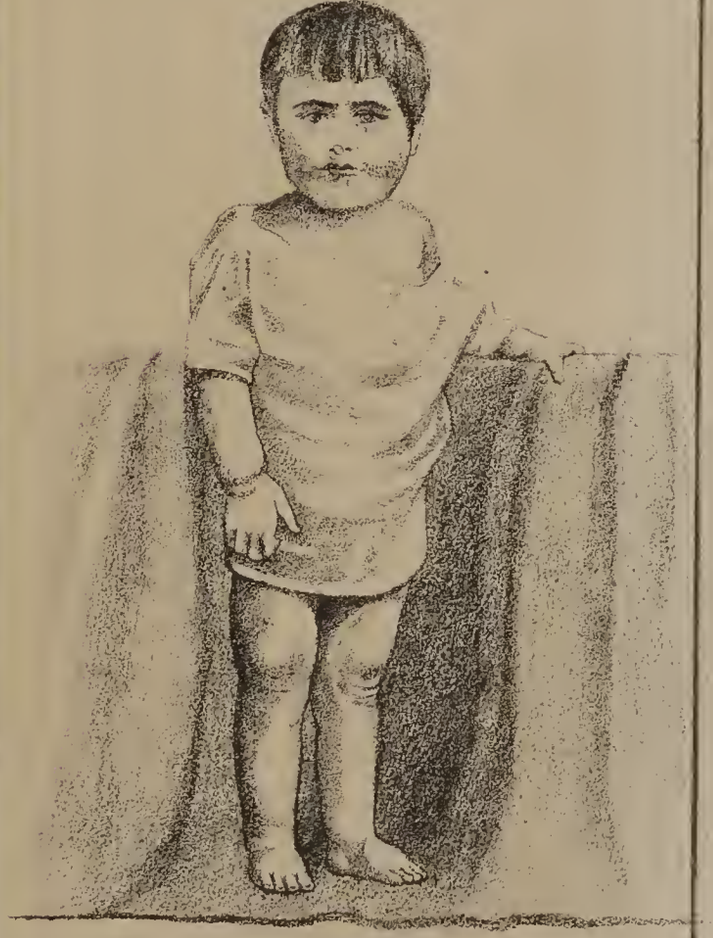
AFTER OPERATION.

Fig. 3.



BEFORE OPERATION.

Fig. 4.



AFTER OPERATION.

MR. ORMSBY ON FORCIBLE FRACTURE FOR CURE OF BOWED LEGS.

Stewart Woodhouse, and in the presence of Surgeon-Major Killery, Army Medical Staff, and Surgeon-Major Backhouse, Indian Medical Service. Child made a good recovery.

Case XIV.—Patrick F., aged two years, admitted into Children's Hospital, Dublin, August 14th, 1883, suffering from double-bowed legs. Both legs fractured by manipulative force, under ether, assisted by Dr. Stewart Woodhouse, in the presence of Surgeon-Major Backhouse. Limbs put up in straight splints, and child made good recovery; discharged September 14th, 1883.

Case XV.—Cecilia W., aged two years, admitted into Children's Hospital, Dublin, January 17th, 1884, suffering from double-bowed legs, from rickets. Both legs fractured by manipulative force, under ether, assisted by Mr. William Stokes, F.R.C.S., February 6th, 1884. Child made a good recovery, and was discharged, with straight limbs, March 28th, 1884. Plate taken from photographs. Figs. 3 and 4.

Case XVI.—Bessie L., aged three years, admitted into Children's Hospital, Dublin, March 25th, 1884, suffering from double-bowed legs, from rickets. Both legs fractured by manipulative force, under ether, assisted by Mr. William Stokes. Child made a good recovery, with straight limbs.

Case XVII.—Walter B., aged two years, admitted into Children's Hospital, Dublin, May 19th, 1884, suffering from double-bowed legs, from rickets. Both legs fractured by manipulative force, under ether, assisted by Mr. William Stokes. Child made a good recovery, and deformity completely rectified.

Case XVIII.—Mary K., aged two and a half years, admitted into the Children's Hospital, Dublin, July 1st, 1884, suffering from double-bowed legs, caused by rickets. Both legs fractured by manipulative force, under ether, assisted by Mr. William Stokes, July 5th, 1884. Deformity rectified; limbs placed in straight position, and treated with lateral splints. Child made a good and rapid recovery, and was discharged August 8th, 1884.

Case XIX.—Ellen B., aged three years, admitted into the Children's Hospital, Dublin, suffering from double-bowed legs, from rickets, October 28th, 1884. Both legs fractured by manipulative force, under ether, assisted by Mr. William Stokes, November 12th, 1884. Limbs placed in straight position; child made a good recovery.

Case XX.—Ernest M'G., aged four years, admitted into Children's Hospital, Dublin, November 3rd, 1884, suffering from double-bowed legs, caused by rickets. Both legs fractured, under ether, by manipulative force (knee in this case had to be used), assisted by Mr. William

Stokes, November 12th, 1884. Patient made a good and satisfactory recovery, with complete rectification of deformity.

Case XXI.—David K., aged three years, admitted into Children's Hospital, Dublin, suffering from double-bowed legs, from rickets, November 5th, 1884. Both legs fractured by manipulative force, under ether, November 12th, 1884, assisted by Mr. William Stokes. Child made a rapid and satisfactory recovery.

Case XXII.—Anne L., aged twenty-two months, admitted into the Children's Hospital, Dublin, December 2nd, 1884, suffering from double-bowed legs, caused by rickets. As the child was so young, splints were first applied; however, as no improvement appeared to take place, both legs were fractured by manipulative force, under ether, January 16th, 1885, assisted by Mr. William Stokes. Child made a rapid recovery, with complete rectification of deformity.

Case XXIII.—Bridget C., aged three years, admitted into the Children's Hospital, Dublin, December 15th, 1884, suffering from double-bowed legs. Both legs fractured by manipulative force, January 16th, 1885, under ether, assisted by Mr. William Stokes. Limbs placed in a straight position, and treated with lateral splints; child made a good recovery, and was discharged February 27th, 1885.

Case XXIV.—John H., aged three years, admitted into the Children's Hospital, Dublin, March 6th, 1885, suffering from double-bowed legs, from rickets. Both legs fractured by manipulative force, under ether, assisted by Mr. William Stokes. Child made a rapid and satisfactory recovery, and was discharged in one month.

Case XXV.—Maurice F., aged two years and six months, admitted into Children's Hospital, Dublin, February 27th, 1885, suffering from double-bowed legs, from rickets. Both legs fractured by manipulative force, under ether, assisted by Mr. William Stokes. Child made a rapid and satisfactory recovery, with complete rectification of deformity, and was discharged in five weeks from date of operation.

Art. XXVI.—*Arthritis Neurotica; its Causation and Treatment.*

By J. M'Ardle, F.R.C.S.I.; Surgeon to St. Vincent's Hospital.

In most surgical text-books little, if any, mention is made of joint affections occurring in the course of spinal or other nerve injury. The following cases seem to me to have a direct bearing on the subject, and would prove (as far as I can see) that arthritis of neurotic origin is not so infrequent as is generally supposed.

My object in bringing them forward is to contrast this affection with Charcot's disease on the one hand, and with gouty and rheumatic inflammation of joints on the other.

For the notes of the first case I am indebted to my friend and former pupil, Mr. A. J. Smyth; the others are reports selected from my own case-book:—

Case I.—*Paraplegia arising from Spinal Injury and accompanied by severe Inflammation of Ankles, Knees, and Hips; Recovery.*—Thomas F., aged thirty-five years, seaman, admitted to St. Vincent's Hospital, under Mr. M'Ardle's care, on October 3rd, 1883. He had never any serious illness until January 23, 1883, when he fell through the hold of a vessel. In falling, he struck a plank placed between decks, and then fell heavily to the lower deck, where his spine came in contact with a log. He recovered himself a moment after the fall and stood up; he would have fallen again, but the captain and another walked him about; "but life," to use his own expression, "gradually leaving his legs," they laid him on some canvas, where he remained exposed to the cold for three hours; he was then taken ashore and brought home, a distance of two miles, where he was seen by a doctor, who recommended him to the County Infirmary. The symptoms first noticed were—loss of power in the legs, inability to pass water, dizziness in the head, stiffness of left arm, and a sensation as if a cord were tied around his waist.

On the second morning after the accident the upper extremities became affected, the left side being in a worse condition than the right. Catheters were passed, purgatives and enemata administered, leeches applied to the back, and iodide of potassium and bark given internally. This treatment had the effect of partially restoring the use of the arms and entirely the power of the bladder; but finding no further improvement, he came to St. Vincent's Hospital, as above noted, nine months after the accident. On admission he was found pale and emaciated, unable to make the slightest movement, except with his head, left arm, intercostal and abdominal muscles; breathing difficult; total loss of power in legs; muscles of back in a state of spastic rigidity, as also those of left arm, which was in a flexed position. It was impossible to place him in a sitting posture. There was no anæsthesia, but he complained of a peculiar prickling sensation in his legs and feet, which were always cold. His legs appeared slightly swollen; pressure produced pitting down to the bone; and joints (knees and ankles) were greatly enlarged, painful, and crepitant. There was a brawny feel about the joints, slight effusion into the synovial cavity, all the furrows about them quite obliterated and movement of them impossible; the muscles were quite wasted, but responded to electric stimuli; skin was thick and scaly, leaving the inner and the anterior part of the leg, the inner and dorsal surface of foot, covered by

great patches of ichthyosis. A large cicatrix remained after an eschar which had formed over the coccyx; there was a considerable swelling over the last cervical and the upper dorsal vertebræ, pressure on which caused severe pain along his arms. Heart normal; pulse 80; temperature 97°; respiration normal; patellar reflex exaggerated on both sides; cremasteric reflex slightly marked on right side, none on left; abdominal and pectoral reflexes absent. On applying cold to spine, no abnormal sensations.

Treatment.—Blister to spine; internally iodide of potassium, for which, in a short time, perchloride of mercury was substituted. In one month after admission, voluntary motion was re-established in legs and arms; then strychnine was substituted, and continued until the patient was discharged. From the beginning the constant current was applied, and after the pain of joints was relieved, passive motion was used. Friction and kneading of the dorsal muscles, as well as those of the extremities, was commenced at the same time. The arthritis in this case came on two months before admission to St. Vincent's, and at a time when he was kept at perfect rest; local applications had been used to relieve the pain, but no relief was obtained until after blistering the spine, when a gradual subsidence of the swelling took place and the pain disappeared.

Case II.—*Spinal Concussion followed by Hemi-paraplegia, then Complete Paraplegia and Arthritis of Knees and Ankle-joints; Recovery.*—Mr. John L., aged sixty years, unmarried, family history good; he was quite strong until commencement of present attack; never had syphilis, gout, or rheumatism.

History.—On September 8th, 1884, patient fell on his back on a flagged floor. During the following day he moved about, but felt pain in the lumbar region; left leg became powerless, and on 11th he went to bed, where, on 13th, the right leg became powerless. In a few days both limbs became swollen; after a little rest and mild purgation improvement took place, but about 20th the limbs became again powerless, joints became swollen and tender, and on October 27th I found him (when called to see him for the first time) emaciated, and having a very anxious appearance. Respiratory, circulatory, and urinary systems normal; tongue furred, appetite bad. He suffered from constipation, complained of aching pain in the back, and the slightest movement caused intense pain in his knees, hips, and ankles, which were greatly swollen and tender. The patellæ were fixed by effused material; all the normal furrows about the joints were absent, the swelling having an ovoid appearance; the local temperature during my observation was never above normal. There was doughy œdema of both legs—the pitting produced by pressure reaching even in the femoral region down almost to the bone, and remaining for hours after removal of the pressure.

Patches of ichthyosis appeared on inner aspect of leg and foot. There was complete loss of power in both lower extremities, but the muscles responded to electric stimuli. A careful examination with the æsthesiometer showed that sensation was perfect. The feet and legs were numb and cold, and prickling sensations were constantly felt in them. Pressure in the course of tibia, femur, or crista ilii caused deep-seated pain at point compressed. No attempt at moving any of the joints could be made without producing excruciating pain. There was tenderness on pressure over lumbar spine, and any attempt at raising the patient into a sitting posture increased this trouble and produced painful twitchings of the muscles of lower extremity; the legs were everted, and could not be inverted without producing severe pain.

Treatment.—Counter-irritation over spine by chloroform; internally perchloride of mercury; the continuous current was applied. Slight improvement began after the first few days, and on November 20th he could move the ankle-joint without pain. On the 30th there was a decided diminution of the pain in the knees, the swelling gradually subsided, the joints, however, remaining enlarged and stiff. Mercury was now omitted, and iodide of potassium and bark were substituted. The joints, especially the knees, became again painful, and I was obliged to return to the mercury. Soon again improvement occurred, and when the pain disappeared patient was raised to the sitting posture, and liniment of iodine applied along the spine. Soon after this the patient was able to raise his right leg from the bed; the left was still immovable, but in a few days motor power was re-established in it, and since that time the pain has not returned; the swelling and stiffness have been gradually subsiding, and the patient's strength is now quite restored.

Case III.—*Inflammation of Joints, following Exposure to Cold, cured by Counter-irritation over Spine and Perchloride of Mercury internally.*—P. D., aged forty, admitted to St. Vincent's Hospital, December 25th, 1884.

Family history.—Parents and relations are healthy, there being no sign of gout or rheumatism in the family. Some years ago, whilst working as fireman on a Transatlantic steamer, he left the engine-room, where the temperature was very high, and came on deck. The weather was cold and stormy at the time, and he was soon obliged to go below on account of a severe chill. He was placed in his hammock, and when there for a time pain in the lumbar region began, and gradually increased in severity. After some time he obtained a little sleep, but on waking found that he was unable to move his legs. This state of things went on for about forty-eight hours, when swelling appeared in the legs, and with it severe pain in the knees. He was then brought to hospital, where for sixteen weeks he was under treatment. Complete paralysis of both legs

was present—knees, ankles, and hips becoming fixed and swollen. The skin desquamated in patches from his legs. The stiffness remained for six months. He had no cardiac or respiratory trouble, no acid perspiration. Since then he has had eight attacks of a somewhat similar nature, arising from a like cause.

Condition on admission.—He is a well-developed, muscular subject, circulatory and respiratory systems normal; he complained of severe pain in the left shoulder, back of neck, and occiput; copious perspirations, especially about face and head. On 26th painful twitchings of the muscles of lower extremities set in, and with them considerable swelling and intense pain in the joints (left ankle, right ankle, knee, and hip); tongue furred, breath fœtid.

Treatment.—Perchloride of mercury, one-eighth grain thrice daily, Dover's powder, and counter-irritation by chloroform along upper fourth of spine. On 30th all the pain and swelling had disappeared, except in the right knee and hip. Counter-irritation was then applied to lumbar region, and in a few hours this only remaining trouble was removed. On January 4th, 1885, he was able to be about the ward, feeling quite vigorous. There is no trace of nodulation about any of his joints.

In this case myelo-meningitis was probably the cause of the distressing symptoms.

Case IV.—*Inflammation of Joints arising from Curvature of Spine, cured by Perchloride of Mercury and application of Poroplastic Jacket.*—Miss B., aged nineteen years, came under my care on December 27th, 1884, suffering, as she thought, from an attack of rheumatism.

Family history.—There is no trace of gout or rheumatism in the family, but all her paternal relations are tubercular. Her brother died of phthisis, and she herself, some years ago, had suppurating glands in the neck.

History of present attack.—On November 28th, after sitting in a close room with her back to the fire, she came out into the cold, and felt very chilly. She was obliged to remain for some time in the cold waiting-room of a railway station. That night she complained of severe pain in the back, and the next morning her limbs were weak, and pain was felt in right hip, left knee, and ankle. Swelling of the legs now took place, the patient began to lose her appetite, and on December 27th she was pale and emaciated, had severe pain in the back, right hip and ankle, left knee and ankle, and œdema of both legs, which were weak. After counter-irritation over spine and rest in the recumbent posture for a few days, the swelling and pain of joints disappeared. She then moved about as usual, but pain, swelling, and weakness of the limbs returned; and being again consulted about her, I examined the spine, and found well-marked lateral curvature in the upper dorsal region; there was tenderness on pressure over the sixth dorsal vertebra, the right scapula

was very prominent, and there was some intercostal neuralgia on the left side. I now insisted on her remaining recumbent, when, after a few days, all pain and stiffness of the joints disappeared, and with them the œdema. She is now wearing a poroplastic jacket, and has not had a return of the trouble since.

In this case compression of the cord was evidently the cause of the articular dystrophy, since by removing the curvature we succeeded in preventing a recurrence of pain and swelling in the joints.

Case V.—*Hyperæmia of Cord, followed by Arthritis of Knee and Ankle, cured by Counter-irritation over Spine and Perchloride of Mercury internally.*—Mrs. L., aged fifty years, admitted into St. Vincent's Hospital suffering from typhoid pneumonia. During convalescence from this affection swelling of the right leg and painful twitchings of the femoral muscles occurred. Soon after the knee and ankle of that side became stiff and very painful, and she complained of a dragging pain in the lumbar region. Many local applications were tried, but to no purpose. When she came under my care on February 10th, 1885, her condition was as follows:—

General health good; all signs of chest trouble had disappeared. I examined the right leg, and found that the epidermis was peeling off in large firm patches; the limb was very œdematous, the knee being twice the normal size, and very painful. She could not raise the leg from the bed; every attempt at doing so caused severe pain and a backward displacement of the tibia. On fixing the femur, I found that lateral movement of the leg, to a considerable extent, could be brought about. The ankle was stiff and greatly swollen; there was no phlebitis. She complained of dragging pain in the back, and on examining it there was pain on pressure over the upper lumbar and the lower dorsal vertebræ. The resemblance of the condition here to that in cases of injury of spine, led me to believe that I had to deal with some hyperæmic condition of the cord. Consequently, I stopped all local treatment, blistered the lower dorsal spine, and gave the patient perchloride of mercury in full doses. In a few days the pain disappeared, the swelling of the limb soon after became much less, and in the course of three weeks she was able to be out of bed, and now the only evidence of the disease is the lax knee-joint.

Case VI.—Mr. T. J., aged twenty years, came under my care in September, 1880. After suffering a severe fall on the back of the neck spastic paraplegia occurred, and with it swelling and pain in the elbows and knees; there was general hyperæsthesia, and death took place on the tenth day from meningitis. The *post mortem* showed that the cerebral and spinal membranes were red, and covered here and there with patches of lymph, and that the cord was compressed in the lower cervical region by lymph deposited between it and the bodies of the vertebræ.

Case VII.—In this case, notes of which are not forthcoming, the patient got severe pains in knees, ankles, and hips, and doughy œdema of legs, dying rapidly of meningitis, probably of syphilitic origin. The *post mortem* showed that the knee-joints were enlarged, the articular ends of femora soft, and the cartilages indented. The membranes of the cord were thickened in the lumbar region, and the nerves passing therefrom enlarged, and dark purple in colour.

This completes my list of cases in which joint trouble arose in the course of disease of the central nervous system; and before entering on the consideration of arthritis arising from peripheral nerve lesion, we may discuss the symptoms and relations of the cases noted.

We have, in the cases before us, spinal injury, or disease followed by more or less paralysis, painful swellings of the joints, the skin desquamating in patches, producing an appearance of ichthyosis. This latter condition was well marked in Cases I. and II., and I have never met with this condition so well defined in the course of any other affection.

The œdema, which I would term doughy, seemed quite characteristic, the pitting on pressure occurred only when considerable force was employed, and although there is great wasting of the muscles, the outline of the limb is well preserved.

Local treatment affords no relief from the pain, and no matter in what condition the limbs are placed, œdema is persistent. The arthritis is confined to the joints below the seat of injury, and pain is developed on pressure in the course of the long bones. The proofs of the neural origin of this arthropathy may be derived from—(1) clinical observation; (2) *post mortem* examinations; (3) therapeutic results; (4) experimental researches.

In all the cases in which arthritis has arisen after injury of the spinal cord, the symptoms of joint trouble came on after the patient had been at perfect rest, as in Cases I., II., and V.; consequently, they could not be the result of local injury. In all of them symptoms of myelitis, meningo-myelitis, or compression, as well as evidences of muscular and cutaneous degeneration, were present. Now, when injury of the cord is followed by paralysis, muscular atrophy, &c., we look upon those conditions as evidence of lesions or disturbances in trophic or other centres, and it is only fair to suppose that the graver affection (arthritis) is of like origin.

Dr. Ord, in his paper read at the meeting of the British Medical Association at Belfast last year, called attention to the

subject of arthritis myelitica, and mentions in support of the theory of its central origin the following case, which resembles one of mine:—

A lady, after a severe chill, found her knees become swollen and painful; the ankles, hips, elbows, hands, and shoulders were in succession attacked with the same trouble; all the joints were excessively swollen and tender. The joint affection was one of steady progression, and ended by rendering her practically helpless as regarded locomotion; the reflexes were exaggerated.

Dr. Gull, in "Guy's Hospital Reports" for 1858, Case XXVII., gives one in which the patient—after suffering severe pain in the back of the neck and between the shoulders, a constricting pain round the chest, and spasmodic twitchings—developed paraplegia, and with it severe pain and considerable swelling of the ankles, knees, and hands, perspirations being irregular.

In Case XXVIII. concussion of the spine was followed by partial paraplegia, painful swellings of the ankles and wrists, and œdema of the limbs; recovery.

Erb (*Ziems. Encyc.*) says that the joints in polio-myelitis are the subject of general atrophy—that they become deformed, abnormally movable, partly through disappearance of the articular extremities of bones and cartilage, partly through relaxation and stretching of the ligaments. He also mentions that in hemiplegia inflammatory affections of the knee-joint occur on the paralysed side. Pressure myelitis also causes, according to this authority, trophic disturbances at the joints.

In the *Berliner klin. Woch.* for 1883, Dr. B. Reidell records a case in which, after a punctured wound between the first and second lumbar vertibræ to the left of the middle line, the patient suffered from severe and destructive arthritis of ankle, knee, and hip of left side.

As regards the results of examination after death of patients in whom arthritis has been found to accompany paraplegia, in all the cases of which I am aware, compression of the cord, inflammation of its membranes, or some such condition, was present.

In Case VI. the *post mortem* revealed a thickening of the dura mater, with effusion between it and the bodies of the vertebræ, extending from the third to the seventh cervical. In Case VII. I also had an opportunity of examining the condition of the cord and its membranes. I found the latter thickened in the region of the lumbar enlargement, the nerves passing from which were dark

purple in colour, the lower part of the canal being filled with a gluey material.

Dr. Gull, in "Guy's Hospital Reports" for 1856, p. 145, records a case in which rheumatic-like swellings of the joints occurred in a patient suffering from paraplegia. The *post mortem* revealed a small tumour, the size of a hazel nut, pressing on the spinal cord at the region of the first dorsal vertebra.

The same authority, in the volume for 1858, records a case (XXXII.) in which partial paralysis occurred in both legs, and the right knee showed symptoms of spontaneous synovitis. The *post mortem* revealed tubercle in the cervical region of the cord, producing arachnitis and constricting the cord.

Although little reliance can be placed on the results of treatment as a proof of the pathology in any given case, still I think that, in the above cases, the rapid improvement which occurred after counter-irritation over the spine (when all local and constitutional treatment had failed to afford relief) would point to the central origin; and, taken in conjunction with the fact that not only was pain relieved and œdema removed, but muscular atrophy stopped and motor power restored, I look upon it as a link in the chain of evidence of primary implication of the cord.

Experiments on the nervous system are so surrounded with perplexing difficulties, and the results thereof so liable to be wrongly interpreted, that they must not be allowed to weigh too much with us in the consideration of this subject. The following, however, may aid us in our efforts at determining the source of an affection which deserves our attention, not so much on account of the frequency of its occurrence as on the danger of allowing it to run its course, should we mistake it for a more common but less formidable disease—a disease with which I have on two occasions seen it confounded—I allude to gouty synovitis. The experiments of Mantagazza show that artificial irritation of the cord is capable of producing degenerative changes in the soft tissues below the point of lesion, and also enlargement and softening of the articular ends of the bones, and, if persisted in, will even produce osteal fringes resembling those of rheumatic arthritis. Whether the results thus obtained can be truly said to depend on the neural disturbance or not, is still doubtful; but, apart from this, I think the other evidences just mentioned point strongly to the central nervous system as the point of origin of the articular dystrophy.

Now that I have endeavoured to lay before you some proof of

the neural origin of this disease, I shall point out the characters which distinguish it from those affections which are liable to be mistaken for it. In a small percentage of cases of locomotor ataxia, arthritic affections arise, but they are painless—they occur before paralysis sets in, and pass rapidly onwards to the production of loose joints. In neurotic arthritis, on the other hand, this state of things is all reversed. The characters which distinguish it from gouty and rheumatic inflammation may be tabulated thus:—

1st. It is rarely if ever accompanied by fever.

2nd. It comes on after or with paralysis, and affects only partially or entirely paralysed limbs.

3rd. The bones are tender on pressure below the point of spinal lesion.

4th. The articular swelling is due to a synovial effusion and periarticular exudation, which fixes the patella if the knee be affected.

5th. It is accompanied by a doughy œdema of the limbs and cutaneous and muscular atrophy.

6th. The treatment for gout or rheumatism utterly fails to afford relief.

7th. If the spinal trouble be not sufficient to produce death, the joints are completely restored to functional activity, the pain and œdema first disappearing, then the paralysis, and last the thickening and stiffness of joints. Contrast this with gout, in which there is no paralysis (until inflammation is propagated to the cord), no tenderness, except at the joints, especially that of the great toe, no œdema, no muscular or cutaneous atrophy, in which attacks are short, usually increasing in severity and leaving permanent traces behind in the shape of deformed joints, in which deposits of urates abound. Rheumatic inflammation is accompanied by high fever (paralysis is only secondary if it occurs at all), it has characteristic acid perspirations, all the joints are affected, there is no œdema, and wasting of the limb occurs, if it occurs at all, only from want of use.

There is sufficient dissimilarity here to render the diagnosis easy in the extreme; but when we compare neurotic arthritis with an affection variously styled arthritis deformans, rheumatic arthritis, osteo-arthritis, rheumatic gout, nodosity of the joints, and a host of other names, we evidently have to deal with an affection the existence of which is evidenced by such varied symptoms that the most conflicting conclusions are drawn therefrom as to the pathology of the affection.

Some who have noted cases similar to mine have called them rheumatic, and one of the cases which I have described was under treatment for gout for a considerable time before it came under my care. In my mind we might as well attempt to make the rheumatic or gouty diathesis account for the muscular and cutaneous degenerations which accompany compression or other simple myelitis, as to credit them with the production of articular troubles such as I have described. Here are patients without a trace of rheumatic or gouty tendency, and on receipt of an injury of the spine they become paralysed; in a definite time they develop arthritis with the peculiar symptoms described. After counter-irritation over the spine, and the internal administration of perchloride of mercury, all traces of the trouble disappear—am I to call this rheumatic gout? If so, the sooner we investigate the condition of the spinal cord in cases of rheumatic arthritis the better, for in the cases which have come under my notice the ordinary treatment for rheumatic and gouty inflammation was useless, while that directed to the removal of the spinal disabilities was successful; whatever may be the cause exciting or determining of this disease, I believe that in all cases the immediate one is inflammation or its products implicating the cord. The manner in which this central lesion implicates distant structures is still a vexed question, but when we come to consider cases of arthritis arising from peripheral nerve lesion, we shall discuss the views of the more reliable authorities.

The treatment which I have found most useful is as follows:—

1st. Insuring perfect rest by sand-bags, keeping the limbs raised, and avoiding all restricting appliances, which would interfere with the circulation.

2nd. Counter-irritation over the spine by Corrigan's button, blistering, or liniment of iodine.

3rd. The internal administration of perchloride of mercury in the early stage, strychnia and digitalis in the later.

4th. Having relieved pain, friction, and passive motion of the joints.

ART. XXVII.—*Notes on some Anatomical Anomalies.*[a] By F. T. HEUSTON, M.D., M.Ch., F.R.C.S.I.; Lecturer on Anatomy, and Registrar of the Carmichael College of Medicine, Dublin.

IN this paper I have departed from my original intention, which was to have mentioned, for statistical purposes, all the anomalies found in the Carmichael College Dissecting-room during the past Session, but on collecting my notes I found they were of too voluminous a nature to be included in one paper, so I selected the following five examples of muscular and five examples of vascular anomalies:—

MUSCULAR.

I. *Female, No.* 6.—*Left upper extremity; biceps.*—A well-developed muscle, arising between the insertion of coraco-brachialis and the origin of the brachialis anticus, passing on the inner side of the biceps, to which it had a fascial attachment, and being finally inserted into the semilunar fascia of the biceps.

II. *Male, No.* 24.—*Right upper extremity.*—The biceps having arisen by an additional head, similar to the preceding, and which was also inserted into the semilunar fascia, which, being thus very strong, gave origin to two distinct sets of fibres—(1) an outer or superficial head to the flexor carpi radialis, which united with that muscle about two inches below its origin; (2) from the deep surface of this muscle and fascia another set of fibres passed to be inserted into the radial aspect of the pronator radii teres about its centre. The origin and insertion of both pronator radii teres and flexor carpi radialis were normal.

III. *Male, No.* 36.—*Left upper extremity.*—The biceps arose by four heads; the central pair of which represented the normal long and short heads; the external arising from the tendinous attachment of the deltoid, and slightly from the neighbouring bone, between the origins of the triceps and the external prolongation of the brachialis anticus, was inserted into the external border of the biceps close to its tendon. The internal head had the same origin as the additional head in the two former cases.

Remarks.—The biceps being one of the most variable muscles in the body (holding third place in this class), would seem to present no room for extra description, but as there existed a couple of points in the above cases which have not received attention, I thought they were worthy of notice. With regard to an extra head to the muscle, the frequency of occurrence is great, being found by Hallet once in every eight subjects; Wood, 18 in 175;

[a] Read before the Sub-Section of Anatomy and Physiology of the Academy of Medicine in Ireland, Thursday, May 7th, 1885.

Theile, 1 in 9; Macalister, 1 in 10. Hyrtl states that the usual additional head is an aberrant slip of the brachialis anticus, but from what I have observed, not alone in the above cases, but in numerous other examples I have met, I must agree with Macalister in stating that this is not ordinarily the case. Macalister ("Muscular Anomalies in Human Anatomy") notes an additional origin of the pronator radii teres from the biceps tendon and semilunar fascia, as also origin of the flexor carpi radialis from same source; but I can find no record of a double origin as found in my second case, which, combined with the triple origin of the biceps, renders it of interest. Four heads to the muscle are much rarer, Macalister noting 2, Theile 1, Henle 1, Meckel 1, and Wood 1, which last is the only example with an origin similar to my case.

IV. *Female, No.* 21.—*Right lower extremity.*—A well-developed muscle arose from the lower fourth of the postero-internal surface and posterior border of the shaft of the fibula, and slightly from the malleolus; it soon terminated in a tendon, which passed through the internal calcaneo-malleolar grove, to be inserted in the inner border of the flexor accessorius and fibrous connexion between the tendons of the flexor longus digitorum and flexor longus pollicis.

V.—In the same subject another well-developed muscle arose from the posterior surface and internal border of the tibia for its lower fourth, the tendon passing through the internal calcaneo-malleolar grove, to be inserted into the internal border of the flexor accessorius. In both of the foregoing cases the tendon of the flexor brevis digitorum to the fifth toe was absent.

Remarks.—Although "Quain's Anatomy," 9th edition, states the above muscle (flexor accessorius longus digitorum) to be of frequent occurrence, I cannot find any satisfactory accounts as to the exact relations of the muscle to the flexor longus digitorum, particularly as to its usual insertion and frequency of occurrence; and I considered this case as being particularly interesting, showing in the one subject examples of the different origins described—viz., from fibula in the one extremity and tibia in the other, with practically the same insertion in both of the extremities. The symmetrical absence of the fourth tendon of the flexor brevis digitorum in this case was also interesting.

VASCULAR.

I. *Female, No.* 5.—On the left side the foramen spinosum was absent, while on the right side a small foramen existed, through which a minute artery passed. The place of the middle meningeal artery was taken on

both sides by a branch of the ophthalmic artery, which, having its origin within the orbit, passed through the superior and external angle of the sphenoidal fissure, to be distributed after the manner of a normal middle meningeal artery.

II. *Female, No.* 25.—*Right upper extremity.*—An aberrant artery, which arose from the axillary, above the origin of its subscapular branch, passed in the arm to the inner side of the brachial artery, to unite with the radial about two inches below its commencement. In this case the brachial artery bifurcated about one inch above its normal position.

III. *Male, No.* 28.—*Right upper extremity.*—In this case also an artery arose from the axillary, opposite the upper border of the teres major muscle, and passing between the heads of the median nerve, proceeded down on the outer side of the brachial artery, to unite with the radial recurrent, which was of large size, in the anticubital fossa.

IV. *Female, No.* 25.—*Left upper extremity.*—The suprascapular artery, arising from the axillary opposite the second rib, passed upwards beneath the clavicle through the cords of the brachial plexus, and having given a branch to the subscapularis muscle, passed beneath the transverse ligament with the suprascapular nerve, to be distributed as usual.

V. *Female, No.* 34.—*Right upper extremity.*—The ulnar artery, arising from the brachial at its usual place of origin, passed superficial to the flexor muscles of the forearm, giving off no important branch. The radial artery, while in the anticubital fossa, gave off a large branch, from which the following vessels had their origin—viz., anterior and posterior ulnar recurrent, radial recurrent, comes nervi mediani, and anterior and posterior interosseous, all of which had a normal distribution.

Remarks.—With reference to the foregoing, No. I. is stated by Quain as having been noted, although he does not state that the origin of the vessel was within the orbit.

Aberrant arteries are comparatively common, having been noted by Harrison in the proportion of three out of forty cases. Quain mentions nine examples out of 1,040 subjects examined. The most interesting points in those I bring under your notice are to be found in No. III., where the artery passed between the heads of the median nerve, and terminated in the radial recurrent artery. Quain mentions having seen an example of termination in the radial recurrent, which, however, took its origin from the ulnar artery. Monro and Meckel give examples of termination in the ulnar artery.

The fourth of my series (abnormal suprascapular) has been seen by Quain in three cases, but he does not state the relation borne by the vessels to the brachial plexus or to the supra-scapular ligament.

ART. XXVIII.—*Basic Aural Dyscrasia; being an inquiry into a condition of system disposing to Aural Disease, now for the first time described as the Basic Aural Dyscrasia, involving an explanation of the mode of causation of Tinnitus Aurium, and a description of a hitherto unnoticed form of Deafness—Vascular Deafness.* By ROBERT T. COOPER, M.A., M.D. Univ. Dubl., London.

[*Continued from page 421*].

THE term "Functional," as applied to abnormal murmurs, ought, I feel convinced, to be expunged from medical literature.

These bruits, then, are not anæmic, neither are they functional. We take it they point to some measure of structural alteration in the blood-vessels themselves, rather than in the composition of the blood passing through them.

To obtain a sufficient and, as we consider, reasonable explanation of their presence, in connexion with aural infirmities, we have only to regard the ear as not an exceptional organ, but one like to, and impressed by disease-forces in every way the same as, those of other parts of the economy. With other organs we find their diseases referable to, or modified by, changes in structure due to varying stages of inflammatory action.

The profession has not forgotten the light shed upon uterine disease when Dr. Henry Bennet devoted an octavo volume of 500 pages to the consideration of inflammation of the womb, nor have they ceased to acknowledge that all that has since been written upon mechanical imperfections—unhappily a frequent cause of uterine troubles—has not lessened or materially undermined the solid strength of the position Bennet then took up. The initial idea upon which Bennet went is conveyed in this prefatory sentence, the latter part of which is as applicable to aural as it is to uterine pathology:—"The great error," says Bennet,[a] "committed by all who have hitherto written on uterine affections, with the exception of some French authors, consists in their looking upon and describing inflammation of the uterus as a rare disease in the non-puerperal state, whereas, in reality, inflammation is the commonest of all the morbid manifestations of that organ, as it is of all other organs of the animal economy."

What is true of the womb is equally true of the ear, and it is satisfactory to find that the majority of aural pathologists are in agreement with us in the acknowledgment of the important

[a] Inflammation of the Uterus. By J. H. Bennet, M.D. London: J. Churchill. 1853.

part played by inflammatory processes upon the ear. But surely if it is thus so completely unquestioned and unquestionable that inflammation is, so to speak, the basis of the morbid action that affects the ear, and if these vascular bruits are such a constant accompaniment of the ear's diseases, how can we forego the very natural conclusion that these bruits are indicative of a certain measure of inflammation—call it irritation if we will—affecting the coats of the blood-vessels? And if such involvement affects the coats of the cervical blood-vessels, how justifiable is the inference that the aural blood-supplying channels, small though their calibre be, are insidiously and progressively afflicted with morbid alterations of a precisely similar description?

The idea, then, would be that the majority of chronic ear-diseases, whether accompanied by the symptom of deafness or not, are representative of inflammatory conditions of the circulatory *media* of the ear, and that the nerves supplying these—the vaso-motor distribution—register by the production of irregular contraction of the coats of the blood-vessels a condition incompatible with health, evidenced as this is by the production of sounds different from those of health during the passage of the blood stream.

If, then, this be the proper interpretation of these bruits, and if irritation really exists in the coats of the blood-vessels, it will follow that permanent structural alterations must be the consequence, and that ear-diseases, indicated as they so largely are by the symptom of deafness will be found most prevalent at times of life when such necrobiotic changes are proved by *post-mortem* examination to be in the ascendant; and this is precisely the case, for it is in old age that we find deafness to be a prevalent infirmity; and not only so, but it is then, and then alone—we speak broadly—that its obstinacy proves so disheartening. This, too, shows why it is that deafness is so commonly found to affect both ears; for, in accordance with Bizot's law, it is characteristic of arterial degenerative disease to affect both sides simultaneously; also, it accounts for the extreme obstinacy of some ear-symptoms, these being reasonably referable to coarctation of the smaller blood-supplying channels and consequent atrophy of the tissues supplied by them.[a]

[a] Our position that atheromatous disease of the arteries may give rise to bruits receives powerful corroboration from Dr. Finlayson in his recent paper in the Brit. Med. Journal, Feb. 28, 1885. Commenting upon a case where there existed during life a loud double murmur, audible all down the sternum, he says:—"The aortic valves were examined very carefully, and tested with water poured into the aorta, and the

Modern thought upon the pathology of other organs entirely supports the position we now take up. Dr. Felix von Niemeyer's views are well known.[a] Thus, in his article on Valvular Disease of the Heart, he says:—"The alterations which cause insufficiency and constriction of the aortic valves are the results of inflammation, but less often of endocarditis, than of a more chronic form of inflammation which attacks the arteries, and whose results are known as *atheroma of the arteries.* Hence it follows, although not without exception, that valvular disease of the aorta is found at a more advanced period of life, when arterial atheroma is far more frequent than during youth, and that its development is more slow and gradual than that of the disorders caused by endocarditis."

This view of aural pathology supplies us with many an obvious practical lesson; one of these is the unscientific nature of the treatment of an otorrhœa with lead lotions and other discutient and desiccating applications—for example, that so much in vogue at the present day of the application of strong spirit lotions to within the meatus, resting, though it does, upon the powerful authority of Professor Politzer of living fame, and claiming an antiquity coeval with him of immortal memory—old Nicholas Culpepper![b]

Then, it shows how utterly fatuous must be the attempt at dispersion of the disease present in the ear by resort being had to medicated inhalants, however ingeniously administered, and however curiously concocted. It explains, too, at least partially, how to account for the fact already referred to, that good hearing may exist with considerable local structural alteration in the central parts of the ear, these cases being explicable upon the supposition that the surrounding circulation is unimpaired and allows of a greater freedom of action in the parts involved than would otherwise be possible.

As showing still further how wonderfully the ear may preserve its functions in the presence of considerable mechanical impedi-

perfect apposition of the curtains, as seen from a somewhat enlarged aorta, without the slightest indication of any chance of regurgitation, was most striking. There was no indication of disease in the valvular structures. The aorta was dilated, and the surface rough and atheromatous. The gravity, therefore," he goes on to say, "of a diastolic murmur still remains as an evidence of organic disease; *but we must include along with aneurysm, amongst possible causes of the murmur, a dilated, rigid, or atheromatous condition of the aorta.*"

[a] Text Book, Practical Medicine, Vol. I., p. 345. London: H. K. Lewis.

[b] It is only fair to say that Culpepper's use of spirits of wine was restricted to deafness "with noise in the ear."—*Vide* Culpepper's Last Legacies; His Physical, Chirurgical Remains.

ments, we may refer to the fact that Dr. Allan Thompson, in connexion with some cases of branchial fistula on the external ear, brought forward by Sir James Paget (*Brit. Med. Journal*, 1st Dec., 1877), showed some drawings of this malformation; in one of his cases the ear passages were entirely closed, and the patient apparently received sound vibrations through the cranial bones, presenting the top of his head for this purpose, while at the same time listening, with his hands covering the sides of his head and defective ears.

And then let us look at the other side of the picture, where interference with the circulation constitutes the only ascertainable lesion present.

Dr. Thomas R. Pooley, of New York,[a] publishes a case of thrombosis of the left lateral, inferior petrosal, and cavernous sinuses, in which these were all completely blocked. In this case the patient, a girl of twenty-one, before death, was absolutely deaf for all sounds by air and bone conduction, but no positive evidences of any disease of the middle or internal ear could be discerned at the *post-mortem* examination; these parts, in fact, except for trivial change in the auditory nerve, were found to be particularly healthy. I allow that the probable syphilitic origin of the disease, and the possibility of a wider involvement of nervous structure than the cadaveric examination revealed, does not warrant our considering it an absolutely conclusive case. Still it has, unquestionably, some degree of positive value as giving countenance to the idea we have for some time entertained, that venous stasis is much more largely operative in the production of confirmed deafness than is generally supposed.

I have myself noticed in cases of severe otitis, where œdematous swelling of the temporal region existed, all but invariably pathognomonic, as Moos declares, of a thrombosed state of the lateral sinus, that while absolute deafness continued during the presence of the external puffiness, hearing power returned simultaneously with its dispersion.

And we know how largely venous stasis operates in the production of symptoms prevalent in gouty constitutions. Witness the swollen and tortuous subcutaneous venous radicles seen round the ankles of the goutily inclined, pointedly referred to by Sir James Paget, likewise the swollen pharyngeal veins, and the strong tendency to venous stagnation throughout the internal as well as

[a] Archives of Otology. Vol. IX., pp. 37–43.

the external parts of the body. That deafness is a frequent accompaniment of chronic gout has long been a universally-admitted fact; and this would entirely support us in our pathological views, for diminution of arterial activity, which, on our theory, must sooner or later occur, will be accompanied by stagnation in the allied veins.

Hence we can see the justice of Professor Politzer's criticism upon the Valsalvian method of Eustachian inflation, when he points out that the frequent production by it of a condition of venous hyperæmia in the mucous membrane of the middle ear—such as may be observed after every performance of the Valsalvian experiment—must necessarily induce a permanent state of hyperæmia of the ear, through which not only the existing inflammatory process is increased, but also disturbances of nutrition are produced in the labyrinth. "As the experiment is one which can be performed conveniently at any time, and as the patients at first experience a temporary improvement after each inflation, they are tempted to resort to it frequently—several times a day even, and for months together. In persons addicted to this habit the deafness steadily increases, and may even, as I have observed in a number of cases, reach a high grade."[a] And Von Troeltsch, also, has pointed out the injurious effect of Valsalva's experiment in old people, insisting on the fact that congestion of the head in cases of fatty degeneration of the cerebral vessels might lead to apoplexy.[b]

Our theory explains, too, what to myself individually has often been perplexing, the astonishing improvement that takes place upon treatment in the hearing power in cases of senile deafness, where a discharge, however slight, has existed—an improvement that could not be accounted for upon the supposition of the removal of pressure effects from the middle-ear, and such as I consider is only possible in the presence of undamaged, or but slightly altered, conditions of the blood-vessels surrounding and nourishing the ear; these being, presumably, freed from corrosion by the derivative effect of the discharge. This fact furnishes us with a hope that local applications to the membrana tympani itself may tend to aid us in the arrest of degenerative decay in the aural circulation, and support the object for which we exhibit internal remedies.

[a] Taken from a Review of Politzer's Text Book of the Diseases of the Ear, in Amer. Jour. of Ootology. Vol. I., 1879, p. 54.

[b] Text Book of Diseases of the Ear, by Dr. Adam Politzer. P. 157. Cassell's Translation. London: Baillière, Tindall, & Cox. 1883.

It is time surely that the destroying angel, Science, stayed her hand; in all conscience this investigation has proved sufficiently iconoclastic, and, if we fulminate against post-aural vesication, it is not without suggesting whether the object desired would be better secured by the application of a little iodine to the clavicular triangles of the neck, even though the patient may question whether anything is thereby being done "*for the ear.*" In some instances I have known a discharge from the ears to follow quickly upon this application—in patients, certainly, who were predisposed to otorrhœa, but in whom all discharges had ceased prior to the iodine being applied—showing, as I take it, that the iodine acted all along the line of fault.

Dr. Edward Hamilton, of Dublin, to whom many members of the profession, the writer among the number, owe a never-to-be-forgotten debt of gratitude for his brilliant and painstaking instruction, used at the bedside to well observe that the surgeon is seldom placed in a position so uncertain and unscientific as when, face to face with an inflammation, his opinion is called for in the determination of the simple question whether cold or hot water will prove the more efficacious. This difficulty is an undoubted one in the presence of inflammation, as we encounter it upon a large scale in the medical and surgical wards of a hospital. It does not apply, however, to the inflammatory conditions met with in the ear; for here we deal with an inflammatory action, the drift of which is distinctly, from first to last, retrograde and debilitating.

(*To be continued.*)

ART. XXIX.—*Large Gall-stones passed per Anum.*[a] By J. W. MOORE, M.D., Univ. Dubl.; F.K.Q.C.P.; Physician to the Meath Hospital and County Dublin Infirmary; ex-Scholar Trin. Coll. Dubl.

ON November 26, 1881, I exhibited to the Pathological Society of Dublin,[b] a set of large gall-stones, which had been passed *per anum* by an elderly woman, a confidential servant, whom I saw with Sir George B. Owens, in two violent attacks of biliary colic, in April and May of the same year. The attacks occurred at an interval of three weeks, and were characterised by agonising pain,

[a] Read before the Pathological Section of the Academy of Medicine in Ireland, Friday, Jan. 16, 1885.

[b] Proceedings of the Pathol. Soc. of Dublin. New Series. Vol IX. 1882. Page 112. And Dublin Journ. of Med. Science. Vol. LXXIII. Page 151.

only slight jaundice, obstinate and incessant vomiting, and intractable constipation. The largest calculus was of remarkable size, measuring three-quarters of an inch in length in its short axis and one inch in its long axis, two inches and three-quarters in its short and three inches and a half in its long circumference. The patient recovered for a time, but sank about a year after her illness.

On February 25, 1882, through the kindness of Surgeon-Major Hare, of the Army Medical Department, then stationed at Mooltan, in the Punjâb, I was enabled to submit to the same Society an account of three large gall-stones passed by a lady, aged forty-one, a patient of Surgeon-Major Hare.[a] The first was passed *per anum* on November 11, 1881, the second on November 25, and the third on January 24, 1882. This last was the largest. It measured a fraction over seven-tenths of an inch in its long axis, three-fifths of an inch in its short axis, and two inches in circumference. Periods of terrible suffering preceded the appearance of the calculi by four days in each instance, and Surgeon-Major Hare was of opinion that these paroxysms of agony coincided with the passage of the gall-stones through the common bile-duct. He wrote:—"No. 1 passed through the common bile-duct on the 7th of November, No. 2 on the 20th of November, and No. 3 on the 21st of January." In the first case, it was, on the contrary, more likely that the gall-stones reached the intestine by ulcerating through the adherent walls of the inflamed common duct and transverse colon.

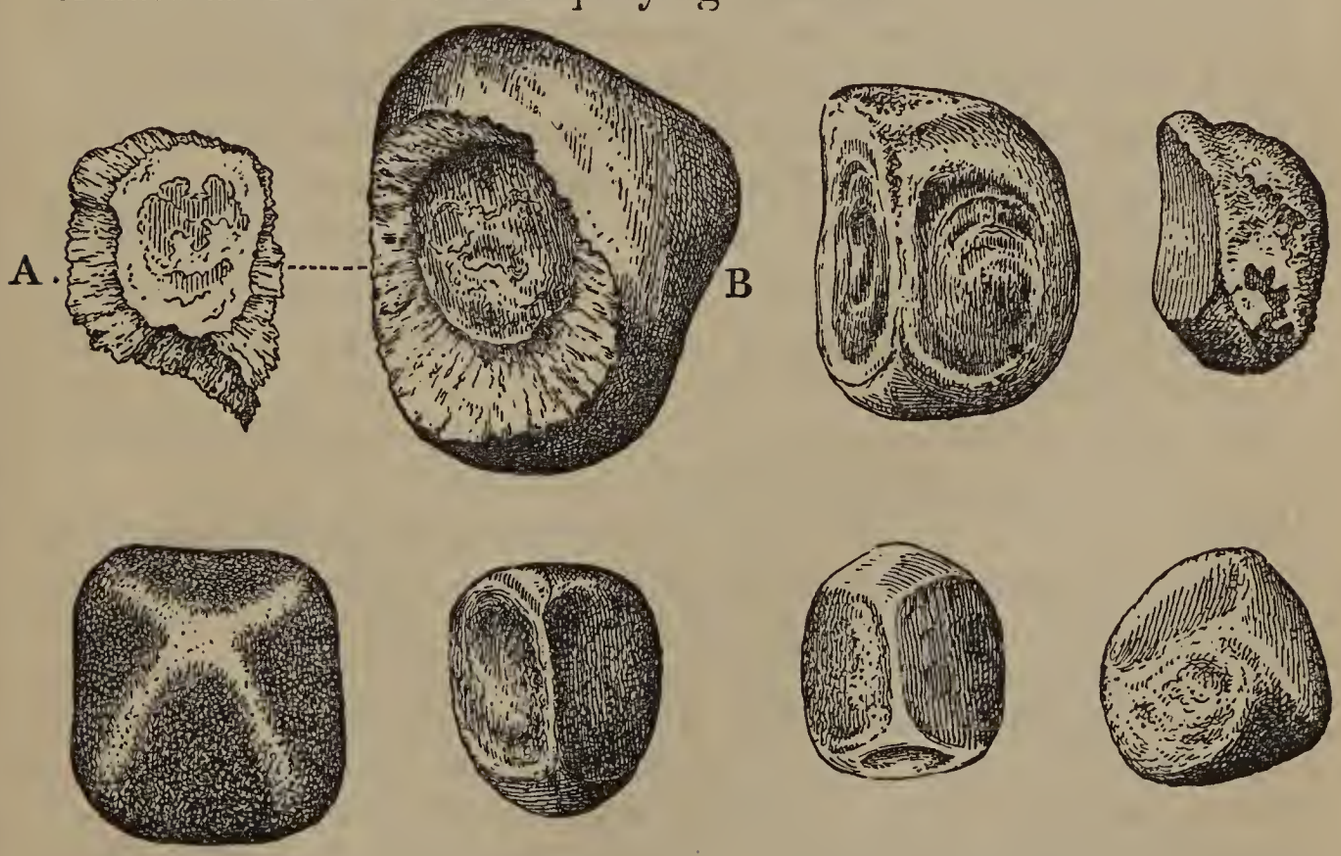
In the autumn of 1884, my relative, Mr. Frederick Hone Moore, L.K.Q.C.P., L.R.C.S.I., practising at Ansty, in Leicestershire, kindly sent me a box containing seven gall-stones, among which are some of unusual size. They had been passed *per anum* by one of his patients, a woman, aged forty-seven or forty-eight years. By his permission, I exhibited them to the Academy of Medicine. The clinical features of the case, derived from notes furnished to me by Mr. Moore, are briefly as follow:—

Case.—M. C., a woman, aged about forty-seven or forty-eight years, very stout, of a sallow complexion but not jaundiced, suffered in March, 1884, from violent pains in the abdomen, and particularly in the region of the liver and gall-bladder. There was no vomiting, and her bowels were regular. The pains, which she attributed to approaching menstruation, passed off in some four days, when she did menstruate—in fact, had menorrhagia.

[a] Ibid. Page 120. And Dublin Journ. of Med. Science. Vol. LXXIV. Page 163.

The patient recovered and enjoyed very fair health, with the exception of occasional slight attacks of paroxysmal pains in the abdomen. In the beginning of July, 1884, the pains returned suddenly and with great violence, frequent vomiting of bile occurred, and there was also obstinate constipation. At this time castor-oil was repeatedly administered by the patient's relatives, but with no effect. Turpentine applied externally and hot fomentations gave some relief. When she was visited for the first time in this attack, Mr. Moore prescribed for her a drachm of sulphate of magnesia in half a pint of warm water every hour, but without effect. Fifteen minims of tincture of opium were then given every four hours, but this treatment only slightly controlled the pain. At night the patient's agony increased, and Mr. Moore was called out to see her. He then applied chloroform to the abdomen locally, with instant relief, and the patient slept until morning. The constipation persisting, with pains and much nausea, Mr. Moore administered 40 grains of compound powder of jalap, with the result that the patient passed the largest of the calculi almost at once. Several other gall-stones subsequently came away, when she quickly recovered, and has since continued in fair health.

At my request, Mr. P. S. Abraham was good enough to make a careful examination of the seven gall-stones, which are represented of natural size in the accompanying woodcut.



Mr. Abraham reports as follows:—"Their composition is pure cholesterin. They weigh altogether 39 grammes (1 oz. 164·3 grains). There is one (marked A.—B. in the woodcut) much

larger than the others, which weighs alone nearly 17 grammes (262·3 grains, or considerably more than half an ounce). This calculus is somewhat conical in shape, the base being smooth by facetation, and 31 millimetres ($1\frac{1}{5}$ inches) in diameter. The height is 37 mm. (nearly $1\frac{1}{2}$ inches). Except on the base, the surface is slightly rugose. At one side a large fragment (A.) has been shelled off, exposing at a deep level a flat facet, which from its rubbed appearance was probably exposed prior to the expulsion of the calculus. The other calculi present numerous facets, some of which are flat, others hollowed out."

Apart from the size of these gall-stones, the question of the *modus operandi* of their escape from the gall-bladder into the intestine is of interest. It seems unlikely that such large calculi passed through the common bile-duct, and it is more rational to suppose that there was an attack of adhesive inflammation of the gall-bladder, followed by ulceration and perforation between that viscus and the intestine. The perforation probably took place at the time of the first severe symptoms in March, and was into the duodenum rather than into the colon for these reasons—first, an interval of about four months supervened between the first and second attacks of violent pain ; secondly, of these attacks the earlier may be assumed to be connected with the occurrence of perforation and the escape of the gall-stone or gall-stones into the duodenum, while the latter was due to obstruction in the lower bowel, being at once relieved on the expulsion of the calculi ; thirdly, the intercurrent slighter attacks of pain were likely associated with temporary intestinal obstructions as the stones passed slowly along through the small intestines and through the ileo-cæcal valve.

TOXIC EFFECTS OF ANTIPYRIN.

The rapid decline of high temperature and the slow and gradual recovery of the same, often requiring twenty-four hours, is characteristic of the ordinary effects of antipyrin. In larger single doses it causes death through cardiac paralysis ; in somewhat smaller doses it affects the nervous system in such a way as to produce irritation of the central apparatus, as shown by general tetanic muscular cramps and increase of blood-pressure, and then a paralysis with loss of reflex excitability and lowering of the blood-pressure occurs. In cases of severe diphtheritic poisoning Dr. Demme warns against the use of antipyrin, on account of the not unusual concurrence of acute myocarditis.—Demme, *Fortschritte der Medicin*, 1884, Nos. 20 and 21, and *Phil. Med. Times*, May 2, 1885.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Manual of Diseases of the Throat and Nose. Vol. II. *Diseases of the Œsophagus, Nose, and Naso-Pharynx.* By Morell Mackenzie, M.D., London; Consulting Physician to the Hospital for Diseases of the Throat. London: J. & A. Churchill. 1884. Pp. 574.

"There can be but one verdict of the profession on this Manual—it stands without any competitor in British medical literature as a standard work on the organs it professes to treat of." Such was the opinion expressed in this Journal when the first volume of this work was under review, and we cordially endorse that opinion in respect to the present volume. The same clearness and conciseness of style, the same completeness in dealing with each subject treated of, and the same cosmopolitan large-heartedness in giving full credit to all those who, working in the same field, have contributed to our knowledge, render this volume, like its predecessor, almost as perfect as is possible. It would indeed be a difficult task to point out errors, or to criticise it adversely. That so much research, so much learning and personal experience, have been compressed into such a comparatively small space, excites our warm admiration; and we have no hesitation in saying that for many years to come these volumes will hold, as they hold to-day, the position of the standard English work on Diseases of the Throat and Nose.

This volume is divided, like its predecessor, into three sections. The first deals with the Gullet, the second with the Nose, and the third with the Naso-Pharynx. The general arrangement of each section is uniform with that in Vol. I. First the anatomy of the part under consideration is discussed; then the methods of examination; next the instruments employed in treating the part are figured or described; and, lastly, the various diseases are systematically dealt with. The equivalents in Latin, French, German, and Italian, are first given under the heading of each

disease. Then follows the author's definition. After this the history is related, and here we find all through the book instances of the amount of labour the author must have spent in collecting and sifting his historical information; the reader is referred in every case to the sources whence the information has been derived. Then follow in order the ætiology, symptoms, pathology, diagnosis, prognosis, and treatment of each disease discussed. Under each and all of these heads we find the same accuracy, care, and thoroughness exhibited.

It would be impossible within the limits of this review to enter at all thoroughly into the various subjects discussed, but a few points may be referred to which will give an idea of the general features of the book.

Under the head of the Anatomy of the Gullet the author adopts the general method of describing the œsophagus as beginning at the *lower border* of the cricoid cartilage, in order to avoid confusion, but he does so under protest:—"It would," he says, "be much more convenient to make the *upper* border of the cricoid cartilage the boundary line between the two sections of the food-tract. The sudden diminution in the calibre of the canal at this point makes, as it were, a natural division."

The length of the œsophagus in an adult male is given as 24 to 26 centimetres, but more important still are the measurements which the author has himself made of the calibre of the tube. These measurements are given for each centimetre below the lower edge of the cricoid cartilage, and the chief point they show is that "the transverse diameter of the gullet is very considerably greater than the antero-posterior measurement."

In examining the gullet, three measures are particularly dwelt on—first, auscultation; secondly, sounding; thirdly, œsophagoscopy. The first of these methods is "entirely due to Hamburger, and the short articles since published" by the author himself, Elsberg, and Clifford Allbutt, "are little more than epitomes of Hamburger's essay." The description given in these pages by the author as to the "best way of practising the art" are exceedingly clear and precise. In sounding the œsophagus, Dr. Mackenzie has arrived at the conclusion, both from experience and from the experiments he made as to the calibre of the œsophagus already referred to, that "bougies somewhat flattened antero-posteriorly would most easily adapt themselves to the lumen of the tube through which they are meant to be passed." . . . "Thirteen sizes

are made, the measure of each one being based on the number of millimetres in the transverse—*i.e.*, their long diameter. The sizes are reckoned from No. 3 to No. 15. Thus No. 3 measures three millimetres from side to side, No. 4 four millimetres, and so on throughout the scale. Nos. 1 and 2 are not made, as they are too small to be of any use." We think the author might with advantage have included the smaller numbers, as we have ourselves succeeded in gradually dilating a cicatricial stricture in the upper part of the tube, which at first admitted only with great difficulty a bougie not more than 2 millimetres in diameter. Moreover, on examining the tables of measurements which the author has given on pages 3 and 4, we find that in a man 6 feet in height the transverse diameter varied in different places from 21 millimetres (the smallest) to 31 millimetres (the largest), and in a man 5 feet 4 inches in height the variation was from 16 to 25 millimetres. Hence it would appear that a bougie whose larger diameter is only 15 millimetres is entirely too small to dilate a stricture to the normal size of the tube at that place. Recurrence is more likely to take place in a partially dilated stricture than in one restored to its normal calibre, and this may be the reason why the author speaks of Keller's series of 35 cases, of which 23 were cured, as "remarkable, and must indeed be regarded as quite exceptional"—p. 134. Œsophagoscopy was first attempted by Semeleder and Stœrk in 1866, but no real progress was made in this difficult method of examination till 1880, when Mackenzie introduced his instrument, which consists essentially of a skeleton tube, which can be introduced closed, and can subsequently be opened *in situ*. In November, 1880, he had attempted to use this instrument on 50 patients and had succeeded 37 times.

Under the head of Acute Œsophagitis, the author distinguishes between that form which occurs in adults and the form found in infants. These sections show how little is known, and how little work has been done, in relation to this affection. Acute œsophagitis in the adult "is certainly very rare, but not so rare as the exceedingly brief description and frequent complete omission of the subject from the ordinary text-books of surgery and medicine would lead the student to imagine." . . . "Occasionally it appears to originate in the pharynx and to spread downwards, and in some epidemics of 'angina' this tendency has been very remarkable; in one instance the disorder seems to have extended upwards in the course of a general inflammation of the intestinal tract, but the

disease in this case was complicated by ague." It has been attributed to the eating of ices and the drinking of cold water, to a dose of castor-oil, to violent muscular exertion in a fit of passion, to the abuse of alcohol, to immersion in a river, and as a complication of rheumatism. As a rule, the acute inflammation rapidly subsides, but occasionally it leads to *ulceration*, rarely to *abscess*, and more rarely still to *gangrene*.

Œsophagitis in children was first called attention to by Billard, but since his time little attention has been paid to it. This, the author thinks, is probably to be accounted for by the fact that, even in children's hospitals, patients under two years of age are not admitted. The predisposing cause of the affection in infants appears to be the physiological hyperæmia of the gastro-intestinal mucous membrane which exists at birth. Out of 200 bodies of newly-born children, free from any sign of disease, Billard found the mucous membrane of the œsophagus, as well as that of the isthmus of the fauces, more or less congested, 190 times. The exciting cause of the complaint seems to be sore nipples, or a defective quality of milk on the part of the mother or nurse, or improper food. The diagnosis is very difficult, and the prognosis is generally unfavourable.

The author next discusses phlegmonous œsophagitis, and considers it exceedingly doubtful whether acute inflammation of the submucous areolar tissue ever occurs as an independent affection. It has been observed as occurring in a case in which a fish-bone had become impacted in the throat, and in a case of poisoning by sulphuric acid; but, as a rule, the injury proceeds from without. Sections follow on ulcer of the gullet, traumatic œsophagitis and chronic œsophagitis. Varicose veins of the gullet are generally considered to be caused by cirrhosis of the liver, but any hepatic disease which obstructs the portal circulation is apt to produce it, and it would appear from Zenker's statistics that the affection occurs with relatively greater frequency in senile atrophy than in cirrhosis. The peculiar relation of the veins at the lower part of the gullet to the general circulation on the one hand, and to the portal system on the other, favours the development of varices. For, as Gubler remarks, there is towards the cardiac orifice of the stomach a neutral territory, in which two sets of veins meet each other, one set being radicals of the vena azygos, and thus communicating with the general circulation, whilst the others end in the portal vein through the coronary branch of the stomach. This

arrangement probably tends to cause obstruction to the circulation where the two currents meet. An additional factor in the causation of these varices is the relatively large capacity of the œsophageal plexuses as compared with the size of the thoracic veins with which they communicate. "It is possible, also, that, owing to the vertical position of the gullet, gravitation may play some part in the production of varicose veins, in the same way as it does in the legs."

The term "peri-œsophageal abscess" is preferred to the expressions "post-œsophageal" or "retro-œsophageal" abscess, as being more accurate, "inasmuch as purulent collections in proximity to the œsophagus are quite as often at the side of the tube, or even in front of it, as behind it." It probably nearly always commences in the glands in the neighbourhood of the gullet, either primarily or secondarily to an eruptive fever. In some instances it may possibly originate in a distinct tubercular deposit, or it may be an accompanying feature of caries of the vertebræ.

Thrush of the gullet and diphtheria in the same region are next discussed, and then follows an excellent account of the malignant tumours of the gullet, which are described under the heads of carcinomata, or cancers of the gullet, and sarcomata.

Though cancer of the gullet may be regarded as the typical disease of that organ, it is not relatively common. According to Zenker and von Ziemssen, in 5,079 autopsies primary cancer of the gullet was present only thirteen times. Age greatly influences the outbreak of the disease, which is extremely rare under forty. The greatest number of cases are met with between fifty and sixty, although the *decennia* immediately before and after that period furnish almost as many cases. Men are much more liable to the disease than women—a fact which is very distinctly borne out by the author's series of 100 cases, of which 71 were of the male, and only 29 of the female sex, and Petri's cases examined at the Pathological Institute at Berlin, which showed that out of 44 cases in only 3 were women the subjects of the disease. Whilst, however, men are more frequently attacked than women, the latter suffer at an earlier age. "The greater predisposition of the male sex to cancer of the œsophagus is remarkable, when it is recollected that more than twice as many women as men die of malignant disease, and that cancer of the contiguous viscus—the stomach—which, in its liability to irritation, is exposed to the same conditions as the gullet, is equally common in both sexes."

As to the causes of the disease in the gullet, as elsewhere, many

have been assigned to it without more reason than that they have been found occasionally in persons who have been affected with cancer in this region. The abuse of spirits has since the time of Gyser been looked upon as an important factor in its production; but the author does not consider that there exists any decisive evidence on this point, but that the effect of excessive indulgence in alcohol has been overrated in considering the ætiology of œsophageal cancer. The supposed cause, such as a foreign body sticking in the throat, is only the first symptom of the malady; but there appears to be cases in which the swallowing of a very hot morsel of food seems to have determined the *site* of the growth. The frequency with which cancerous growths originate in cicatrices in other parts of the body makes it probable that they sometimes have a similar starting-point in the œsophagus.

The most important, constant, and striking symptom of the disease is dysphagia. The author calls special attention to the curious fact that "the patient generally states that the food is arrested at the upper part of the gullet, even in those cases where subsequent *post mortem* evidence shows that the stricture was situated quite low down—a circumstance probably to be explained by the occurrence of reflex spasm." Among the other symptoms we note that a darting pain between the shoulders—occurring independently of deglutition, and not increased by that act—is occasionally the first symptom of cancer of the gullet. Again, patients *in extremis*, previously almost unable to swallow liquids, may suddenly regain their power of taking semi-solid food for a short time before death, but such improvements are illusory, and may probably be explained by the sloughing away of a portion of the growth, or by diminution of spasm from increasing muscular debility.

Time and space will not allow us to refer to the other symptoms related by the author, but the whole description of these cases is given with the graphic clearness so characteristic of the author's writings, and sustains well his character as a careful and accurate observer. He strongly recommends that in using the bougie for diagnostic purposes, it should be done under the influence of an anæsthetic. "The knowledge obtained by means of this instrument whilst the patient retains consciousness is generally incomplete and often misleading. Chloroform is the best agent for the purpose, ether having an irritating effect in these cases, and nitrous oxide being too transient in its action."

The treatment of cancer of the œsophagus is no satisfactory task, but something may be done to prolong life and more to assuage suffering. Directly there is a suspicion of malignant disease the food should be most carefully selected. As to the employment of bougies, the author distinctly states that "as long as the patients can swallow liquids easily, bougies should not be used." When, however, fluid nourishment can be got down only with difficulty, attempts should be made at dilatation. "This should be done twice a week, and the surgeon must be satisfied if he can dilate to the extent of No. 8." On one occasion Dr. Mackenzie was able by means of the œsophagoscope to remove a projecting portion of the growth, and so to make a way open for an œsophageal tube. This is stated to have prolonged life for four or five months in this case. The œsophageal feeding-tube may be used under two conditions—first, when the disease is complicated by spasm; and, secondly, when there is a broncho-œsophageal fistula.

The question of a cutting operation must be entertained directly the diagnosis of the disease is accurately established. Excision of the cancerous growth has been tried twice by Kappeler unsuccessfully, and once by Czerny, the latter case surviving the operation by a year. "The fact that malignant disease of the gullet spreads to contiguous organs at an early period is likely to prevent the operation of resection being frequently applicable."

Half a page is devoted to sarcomata, and then follow paragraphs on non-malignant tumours of the gullet, syphilis, and tubercular disease. Dilatations of the gullet are divided in this work into simple dilatations, sacciform dilatations, and traction-diverticula. The simple variety occur as *primary* dilatations—that is, where no obvious cause can be assigned; and *secondary* dilatations, which are always the result of stricture.

The section on cicatricial stricture of the œsophagus is written in the author's best style. It is clear and complete, embracing all the recent and best approved methods of treatment, and contains an admirable account of the operations of œsophagostomy and gastrostomy. The advantages of œsophagostomy are thus stated:—1st. That it is attended with comparatively little systemic shock. 2nd. That it facilitates subsequent dilatation of the stricture—in other words, it is so far curative that it may enable the patient's existence to be indefinitely prolonged. But, as the author points out, the supposed absence of shock "is not borne out by the actual facts, seeing that in five cases death occurred within twenty-four

hours after the operation, whilst in a sixth the attempt to open the gullet had to be given up owing to the collapsed condition of the patient. As regards the second alleged advantage, it does not appear that there is any case on record in which an œsophageal stricture has been successfully dilated through an opening in the neck." The *disadvantages* of the operation are:—That owing to the depth from the surface at which the gullet is situated, and the fact that when diseased it is often fixed to the surrounding parts, the operation is a very *difficult* one; it is a *dangerous* one owing to the proximity of the large blood-vessels and nerves of the neck, and the thyroid gland, which is not unfrequently enlarged in cases of œsophageal stenosis; and, moreover, there is great *uncertainty* whether the opening in the œsophagus can be made below the stricture; finally, a discharging fistula in the neck is a conspicuous disfigurement.

These objections do not hold good in regard to gastrostomy, which, in the author's opinion, will probably be proved to be the most valuable of all the operations for the relief of œsophageal stricture. The operation consists of three stages—1, to open the abdominal parietes; 2, to transfix the stomach, and secure it to the edges of the wound in the abdomen, and to the integument; and, 3, to open the stomach. In the first stage preference is given to the incision originally proposed by Mr. Howse—that is, one which should run parallel to the left costal margins for a distance of two or three inches, and about a finger's breadth to their inner side, the centre of the incision being made to fall about three-quarters of an inch internal to the outer edge of the *rectus abdominis* muscle. The straight fibres of this muscle subsequently help to form a sphincter round the gastric wound. In the second stage the author advises that the base of the projecting portion of the stomach should be transfixed in a direction parallel to the surface of the belly by two long needles, the extremities of which should reach considerably beyond the edges of the wound on either side. This plan was first recommended by Verneuil to prevent the stomach falling back into the abdominal cavity during the operation. The viscus should now be stitched to the abdominal wall either by a single row of stitches, as advised by Verneuil, or by a double series, as advised by Howse, the object of which is to provide a greater area for adhesion.

The third stage should be postponed for some days, until adhesions have been produced between the corresponding surfaces round the wound. Dr. Mackenzie calls special attention to the fact that

sometimes considerable hæmorrhage has followed the simple proceeding of puncturing the centre of the exposed portion with a fine-pointed bistoury. This may be obviated by opening the stomach with a thermo-cautery point, after the manner of Aubert. Dr. Mackenzie's concluding observations on this subject merit the attention of all surgeons. He sounds for gastrostomy the same warning note which has rescued colotomy and ovariotomy from the fearful fatality which attended them in their earlier days. "On reviewing the whole subject," he writes, "gastrostomy may be said to have now taken its place among the procedures of every-day surgery, and a hope may legitimately be cherished that, as the increasing resources of science render earlier recognition of œsophageal disease possible, the results of the operation will be still more satisfactory in the future. The fatality of gastrostomy has been, in a great measure, due to the fact that it has often been performed only at the eleventh hour, when the patient was almost moribund—'a species of refined cruelty reflecting no credit on surgery,' to use the words of Professor Gross. Œsophagostomy has a much narrower range of usefulness; it is always more or less 'a leap in the dark,' and though its effect may occasionally be brilliant, it is, after all, an operation more likely to find favour with the adventurous surgeon than with the careful practitioner."

After two short paragraphs on simple stenosis of the gullet, and on compression of the gullet respectively, the author gives a very interesting account of rupture of the gullet, to which he appends a table of thirteen recorded cases, all of which terminated fatally. The immediate cause of the rupture appears always to be violent retching, in most cases following a heavy meal. It is likely that vomiting only causes rupture when the contents of the stomach cannot be expelled through the gullet at the same rate that they leave the viscus; this want of relation between expulsion and transmission may be due to the abnormal quantity of fluid in the stomach, or to obstruction of the œsophageal canal. What the causes of this obstruction are cannot always be ascertained. From experiments conducted by the author he concludes—1st, that rupture by direct pressure applied within the gullet always takes place in a longitudinal direction; 2nd, that the rent never occurs in the upper half of the tube, and in most cases is confined to the lower third; 3rd, that the mucous membrane offers greater resistance to strain than the muscular covering.

The abstract of the case of rupture of the œsophagus, observed

by Boerhaave, is written in a truly tragical style. The cruel suffering of the Baron, when some hours after a heavy meal his œsophagus gave way, the treatment he received at first from himself and afterwards from his physician, and the surprise of the latter when the Baron suddenly showed signs of collapse and died before his case had been diagnosticated, are most graphically told.

The section on the œsophagus concludes with paragraphs on wounds of the gullet, foreign bodies in the gullet, and the neuroses of the gullet.

We have entered thus at length into the first section of the book—on the œsophagus—in order to give the reader a general idea of the plan of the work and the thorough way in which each subject is treated. Space will not allow us to enter into the section on the nose and naso-pharynx in detail. They evince the same thoroughness and care, and are the work of a master-hand.

Valuable alike for the student and practitioner, we can recommend the book to all who require information on the subjects of which it treats as the most exhaustive and reliable work of its kind with which we are acquainted in the English language.

Fortschritte der Medicin. Unter Mitwirkung hervorragender Fachmänner. Herausgegeben von Dr. Carl Friedländer. Berlin: Fischer.

We would direct the attention of our readers to this journal, one of the latest and best of the numerous Centralblätter in which German medical literature is so rich. It appears twice monthly. Each number consists of about thirty pages, together with appendices which give reviews of books, medical news, and lists of recent publications. The body of each number contains short original articles, illustrated frequently by plates, and abstracts of papers classified according to their subject-matter. There is no other journal in which everything connected with micro-organisms receives such early and complete recognition as in this. Many most valuable original articles have already appeared in its pages, as those of Friedländer on the Micrococcus pneumoniæ, and those of Koch on the cholera bacillus. Among the original papers in the volume for the current year we may notice one by Passet, of Munich, on the micro-organisms of suppurative inflammation of the cellular tissue in man; on inoculation tuberculosis in man, by Tscherning of Copenhagen; on two mycoses of the guinea-pig, by Eberth, of

Halle; and a contribution to the ætiology of acute suppurative inflammation, by Garré, of Basle. The abstracts are written by men thoroughly versed in the subjects of which the papers treat, and have all necessary fulness and accuracy. The Fortschritte is now in its third year, and has established a well-merited and solid reputation. We believe, however, that it is not as widely circulated in this country as it deserves to be; hence this short notice. The subscription is 20 marks per annum.

Photo-micrography. By A. COWLEY MALLEY, B.A., M.B., B.Ch., T.C.D., F.R.M.S. Second Edition. Illustrated. London: H. K. Lewis. 1885. Pp. 161.

MR. A. C. MALLEY is to be congratulated that a second edition of his little book has been so soon demanded. He has evidently taken much pains to improve on his first effort, and the two new photographs are a long way ahead of the frontispiece which appeared in the first edition, the omission of which from the present one should, we think, have tended to increase its author's credit to a greater extent than its reintroduction is likely to effect.

The appearance of a second edition of this book is at least evidence of a growing interest in a subject until recently pursued only by a few workers, and which, when mentioned by writers of standard works on the use of the microscope or photography, has been, as a rule, dealt with in a way which showed but a limited acquaintance with its details, or perhaps as frequently disposed of by a short account of the methods of working suggested or adopted by such men as Dr. Maddox or the late Surgeon Woodward.

We must confess considerable disappointment with our author's revised and enlarged book. We regret that he has not favoured us with further and more detailed information on the matters which furnish its title. It contains over 160 pages, of which 40 only deal with his special subject; the remaining three-fourths of the book treats of optics and photographic processes. Now, with very few exceptions, those who are likely to go in for this line of work will be already more or less familiar with matters microscopic; and, with all deference to our author, we would suggest that for those unacquainted with the details of photographic work a careful study of such a work as that of Abney, recommended at p. 76, together with some practical instruction, would probably insure greater success than could be attained by following the

instructions given by him, which are in places not entirely free from the condition so dreaded by all photographers—viz., "fog." The long description of a process for making dry plates, which occupies 13 pages, is of doubtful utility. Dry gelatine plates can now be obtained of excellent quality at an exceedingly low price, and would prove much more satisfactory than any which are likely to be turned out by the majority of photographers.

The recommendation that the fixing of wet collodion pictures should be effected by "hypo"—no reference being made to potassium cyanide—will, we think, appear strange to photographers whose experience extends back to the pre-gelatine period; and we fear that those who act on the statement, "varnish is unnecessary" (for dry plates), may some day find reason to regret having done so, and omitted to protect some valuable negative.

We are sorry that the grounds for objection to the use of citric acid with the alum bath after fixing (p. 100) are not specified, as in common with numbers of others, both professionals and amateurs, we have long used this combination, not only without experiencing any loss of permanency in the negatives, but rather find that its use much increases their clearness and brilliancy.

The author's directions as to the preparations of microscopic objects, except perhaps those relating to diatomaceæ, &c., are, in our opinion, if intended for beginners, quite inadequate and wanting in detail; and many points of this part of the work are at least open to comment. Now-a-days few, we think, among practical pathologists or histologists will agree in the strongly-expressed preference for Rutherford's freezing microtome. Any microtome in which (as in Rutherford's) the cutting edge touches anything except the tissue to be sectioned must be defective; and, indeed, the author clearly condemns his own favourite instrument when he says (p. 66), "it" (the razor) "requires sharpening after two or three sections have been cut." We fear that the want of appreciation of those microtomes, in which the freezing is accomplished by ether spray, must arise from want of experience of the advantages of a successful application of the principle, as the absence of the nasty mess of ice and salt, and the convenience of being able to cut sections in a few minutes as occasion may arise, gives the ether immense advantages over the slow, cumbrous, and dirty freezing mixture.

At p. 68 we find the following startling assertion:—"The best staining fluid for all preparations intended for microscopical photo-

graphy is Beale's carmine solution." If this were borne out by facts, it would at once reduce to exceedingly narrow limits the specimens which could be successfully photographed, and would exclude valuable staining fluids which possess peculiar advantages for the demonstration of many points in pathology and histology. Fortunately, however, carmine is not at all in our experience the only or even decidedly the best stain for sections which are to be photographed, for we have, perhaps, even more frequently obtained negatives of excellent quality from sections stained with logwood and analine violets and blues than from those stained with carmine, which, as we have just said, is not at all the most advantageous stain in every case, from the microscopist's point of view. Nor does the further statement on the following page—that violet and blue stains produce negatives requiring much intensification—agree with our experience, as with correct exposures we have never failed to get any required density in negatives taken from sections thus stained.

The most satisfactory portion of the book is the brief part relating to the arrangement and manipulation of the apparatus. We must, however, dissent from the objections raised as to a mechanical stage for microscopes employed for photography. Such a stage frequently gives valuable assistance by the precision with which minute movements can be made by its means, and often saves time in finding particular parts of a section when high powers are being used.

In spite of the author's preference for "patent plate" for focussing purposes, we consider that the white surface possesses certain advantages; by using it a general view of the whole picture can be obtained, which is frequently most desirable. The operator is within easy reach of the microscope, lamp, &c., and has not to do his focussing through the medium of a rod, band, or other contrivance, and in using this plan there is no possible objection to employing a high degree of illumination of the object, which, of course, is impossible when focussing on a transparent glass plate, the latter method being also very fatiguing.

A great variety of arrangements of light, microscope, and camera, have been from time to time recommended—many of them very excellent, but, after long experience, that which has proved most satisfactory in our hands, and which we should recommend where possible, is one in which the dark room forms the "camera;" the sources of light being supported outside in any convenient manner,

its rays reach the microscope (which, as well as the support for plate-holder, is placed on a framework within the dark room) through an opening in the wall of the dark room, the microscope being covered in so as to exclude stray light. By this arrangement the apparatus is reduced to a minimum, the only objection to it being that it is not available for such objects as must be examined and photographed while the microscope occupies a vertical position.

An exceedingly convenient arrangement, not altogether novel, but now presented in a very compact form, has been lately introduced by Mr. A. J. Scott, of the Carmichael College of Medicine. It consists of a small and light wooden box, which replaces the eye-piece of any ordinary microscope, and furnished with a miniature dark slide and glass focussing plate; with it excellent little negatives are easily obtained—of course the amplification is small, but such photographs would be useful for many purposes, and when sharp have been enlarged with good effect.

R. A. H.

Clinical Lectures. By Richard Quain, F.R.S.; Surgeon Extraordinary to Her Majesty the Queen; Emeritus Professor of Clinical Surgery in University College, London; Consulting Surgeon to University College Hospital. London: Smith, Elder, & Co. 1884.

Mr. Quain's lectures will be read by any surgeon with advantage and interest. Their style and mode of publication are attractive, and their illustrations are very good as well as numerous. It happens, of necessity, that such a volume, compiled from the clinical addresses of a veteran teacher, must be wanting in one important matter. It cannot be so arranged as to bring down the teaching to the level of the present day; to do so would be to destroy the original character of the lectures. It follows that those who look to it for information must bear well in mind the dates of the first publication of its parts, and be ready to search for progress in the writings of more modern authors. Indeed one regrets that Mr. Quain did not put the dates of each lecture in a foot-note; he has done so for many, but only as occasional references. Had this been done, the value of the volume as a measure of the progress of surgery would have been much enhanced; while the proceeding would in no respect detract from the merits of the many able and original descriptions of disease and its treatment which it

contains. Passing by the lectures on tumours, which our modern classification and microscopy must place on the shelf, we find a more interesting and congenial study in the part of the work which deals with the hip-joint, both its diseases and injuries.

Here we find a record of cases of the highest clinical importance, amply illustrated by exquisite photographs and drawings. The study of many of these cases is most instructive, and suggests many questions to which even the most modern pathology is incapable of furnishing satisfactory answers. Among such we may notice the intra-articular membrane investing the head of the femur in Case 13, Plate VI., the malformations of the femoral neck and head in the cases represented by Plates XII., XIII., and XIV.

The changes in each of these examples are now sufficiently well known as facts, but how far has the pathological explanation been furnished of their details? With regard to the first example, that represented by Plate V1., Fig. 1., the author offers the following suggestion:—"I take the arrangement to be congenital." It was known long since to such men as Cloquet that a membrane such as this could form in a joint simply as the result of disuse, but very few subsequent writers have had the practical acquaintance with the rarer pathological changes to be seen in joints which would enable them to appreciate his description. We feel certain that this specimen of Mr. Quain's is of this kind, and that the membrane which he describes and figures as formed superficially over the neck and head of the femur, with a cartilage and bone beneath it unchanged by disease, was the product of the treatment by rest which arrested the more urgent phenomena of morbus coxæ. One must draw a wide distinction between the characters of the membrane here described and those that appertain to the more familiar fibro-vascular membrane described by Mr. Key in his papers published in the Volumes XVIII. and XIX. of the "Medico-Chirurgical Transactions," which membrane is intimately associated with destructive ulceration of the cartilage and bone in diseased joints.

Passing on to the better known and more important subject of traumatic dislocation of the hip, we have re-read Mr. Quain's paper on "Dislocation below the Tendon" with great interest, and, indeed, to it our observation, made above, as to the advantage of the attaching of the date, chiefly applies. We see in the records of these four cases of dislocation, and of the dissection of the first, how closely to the discovery of Bigelow Mr. Quain has gone; how nearly the details of an exact method of manipulation for the reduction has

been reached by him already in 1848. The following passage contains indeed the whole principle of Bigelow's method, as far as the dislocation "below the tendon" is concerned. Had chance placed dissections of the other forms of dislocation into Mr. Quain's hands, he would, no doubt, have applied to the several dislocations the same principle:—

"The displaced head of the femur is behind the acetabulum. The acetabulum is covered, except at its fore part, by the unbroken capsule of the joint. The opening of the capsule, which is to give admission to the head of the femur to its natural position, is in its inner part. In effecting the movements to restore the displaced part to its natural position, the femur may be considered an angular lever—the arms of which, of very unequal length, meet at the trochanteric angle. That angle is held in place by the unbroken capsule, strengthened by the ilio-femoral fibres and by muscles; the obturator intervenes with its twin muscular slips (gemelli). The capsule so strengthened acts as a support or fulcrum on which the lever is moved. The short arm, the head and neck, the part to be replaced or moved, can only be moved through the agency of the long arm, the thigh. The arms of the lever move in opposite directions." (Page 129).

Anyone reading the account given by Bigelow of this lesion and its treatment will recognise the close similarity in his very minutest details with the passage we have quoted.

The number and excellence of the plates representing disease of the urinary bladder and prostate gland direct special attention to the descriptions of the cases in the text; and we may say that these careful records fully repay the reader for his time spent in the reference. Many, indeed, are typical examples of rare disease, and, from their rarity, most difficult of diagnosis. In these days, when a bolder line of practice has been initiated in the treatment of such, when attempts are being made to remove from the bladder tumours, everything depends on accuracy of diagnosis. Mr. Quain's cases will be found of great use by furnishing many definite land-marks, the examination of which will supplement the necessarily limited experiences of individual observers, and help to a more correct appreciation of the value to be assigned to special symptoms in forming opinions as to the propriety of operative interference.

In the space at our command we cannot examine in detail the several chapters. We have shown, however, to some extent, the general character of the work and its value as a guide to the practitioner.

A Practical Treatise on Urinary and Renal Diseases, including Urinary Deposits. Illustrated by numerous Cases and Engravings. By WILLIAM ROBERTS, M.D., F.R.S., F.R.C.P., Lond.; Professor of Medicine at the Victoria University; Consulting Physician to the Manchester Royal Infirmary. Fourth Edition. Assisted by ROBERT MAGUIRE, M.D. Lond., M.R.C.P. Lond.; Physician to Out-Patients, St. Mary's Hospital, London (late Pathologist to the Manchester Royal Infirmary). London: Smith, Elder, & Co. 1885. 8vo. Pp. 697.

TWENTY years have passed since the first edition of this work saw the light, and exactly nineteen years since we reviewed it in the forty-first volume of this Journal. Our editorial notice on that occasion concluded with these words:—"As a comprehensive treatise on the subject with which it deals we cannot but look on it as the best book yet published in our language; its copious references cannot fail to give it a permanent rank in the libraries of the medical scholar, while its eminently practical, and, therefore, highly useful character, will certainly enhance its value in the eyes of the busy practitioner."

As we are able to endorse the favourable opinion of the work expressed in the passage just quoted, the task of reviewing the present and fourth edition becomes an easy one.

Dr. Roberts divides the book into three parts. Of these the first is devoted to the physical and chemical properties of the urine. It extends over 228 pages, and is in a sense introductory to the more practical or clinical portions. We are old-fashioned and conservative enough to congratulate Dr. Roberts on the strong opinion he expresses in favour "of abiding by the old tests" for albumen in urine—heat and nitric acid. He shows (pp. 188, *et seq.*) that all the new tests—such as acidulated brine, metaphosphoric acid, ferrocyanide of potassium, saturated solution of picric acid, tungstate of sodium, potassio-mercuric iodide, &c.—"give a reaction with something that is not serum-albumen, and are, therefore, untrustworthy, and apt to lead to serious misapprehension." In a paper in the *Glasgow Medical Journal* for 1884, Dr. Roberts has shown that the boiling test, when attention is paid to the due acidulation of the urine, is superior in sensitiveness to any of the new tests.

The second part treats of a group of maladies which may be designated "Urinary Diseases"—diseases of which the chief charac-

teristic is an alteration in the urine, *e.g.*, diabetes insipidus, diabetes mellitus, gravel and calculus, and chylous urine (Prout).

Part III. is the largest division of the work. Organic diseases of the kidney form its subject-matter. They are considered under the headings—active and passive congestion, acute and chronic Bright's disease, suppuration in the kidney, renal embolism, pyelitis and pyonephrosis, concretions in the kidneys, hydronephrosis, cysts and cystic degeneration of the kidneys, renal cancer, benign growths in the kidney, tubercle of the kidney, and entozoa of the kidneys. The work closes with a chapter (XIV.) on anomalies of position, form, and number of the kidneys.

One of the most interesting chapters in the whole book is that on Entozoa. In it the parasitic worms which invest the kidneys are described. They are—*Echinococcus hominis*, or hydatid, *Bilharzia hæmatobia*, *Filaria sanguinis hominis* (Lewis), *Pentastoma denticulatum* (Rudolphi), and *Strongylus gigas* (Rudolphi). In the section on *Filaria sanguinis hominis* the observations of Bancroft, Manson, and Stephen Mackenzie on this parasite in relation to the causation of chyluria will be found incorporated—a proof, if proof were needed, that the work has been brought down to the most recent date.

Les Bandages de l'Orthopédie et les Appareils à Pansements. Description Iconographique. Par Leon et Jules Rainal. Paris : J. B. Baillière et Fils.

The volume before us is an exhaustive catalogue of surgical appliances, containing nearly 300 pages, with 782 illustrations.

The first section is devoted to a description of trusses for the relief of every variety of hernia.

The subsequent divisions detail the most approved form of pessaries and their mode of application, orthopædic apparatus, artificial limbs, and splints of all kinds. The latter section we consider to be one of the most useful in the volume.

The woodcuts are beautifully executed and admirably show the most minute points of the different instruments which they represent.

We believe this work cannot fail to be valuable to every practical surgeon.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

SESSION 1884–85.

President—JOHN FAGAN, F.R.C.S.I.
Hon. Secretary—WILLIAM G. MACKENZIE, F.R.C.S. Ed.

Thursday, March 26, 1885.

The PRESIDENT in the chair.

On the Nature and Treatment of Sporadic and Epidemic Cholera. By ALEXANDER HARKIN, M.D., F.R.C.S.; Consulting Physician, Mater Infirmorum Hospital, Belfast; Membre de la Société Française d'Hygiène, Paris.

THE subject for discussion this evening is one of paramount importance. Cholera, that dread disorder, while ravaging some of the fairest cities of Continental Europe during the past year, has been hovering ominously round our coasts, and we know not the day nor the hour that it may gain a footing in our midst.

Our professional brethren in London have fixed an early day for its consideration, the Local Government Board has lately appointed an additional staff of medical inspectors for the ports, and the medical faculty in Paris, I have reason to know, are already preparing for its reception, on the very probable presumption of its recrudescence in the early spring.

It is, therefore, in my mind, both wise and expedient that we should also take counsel together, and with the experience of those who, like myself, have witnessed every outbreak of the disease in this town, and encountered it in all its forms, and the information supplied by modern science and experiment, we may be enabled to devise competent measures of prophylaxis, and to formulate a plan of treatment on a satisfactory basis. But, to understand the subject thoroughly, we should, in the first place, take a glance at its history. Spasmodic or Asiatic cholera has been known to exist in an endemic form for many centuries in Hindostan, and to have become occasionally epidemic among the natives since

its occupation by England. In the year 1817, however, it assumed a novel and more aggressive character, and quitting its original *habitat* at Jessore in the delta of the Ganges, passing the boundaries of that river, and putting on a migratory and epidemic form, travelling eastward in Asia, and westward in Europe by river and sea coast, and along the principal paths of human intercourse, till, after a progress of twenty years' duration, it at last reached the British Isles. It appeared first at Sunderland, a town in close commercial relations with Hamburg, then infected, upon 4th November, 1831; at Edinburgh, on 27th January, 1832; in London, 10th January, same year; in Dublin, 22nd March; and in Belfast, 14th April, 1832.[a]

I well remember the feelings of terror and dismay exhibited by my fellow-townsmen on that memorable occasion. The Emperor Nicholas had recently succumbed to the pestilence, when on a visit of mercy to his afflicted subjects in Moscow; the accounts from Paris were very alarming, 385 deaths having occurred on 8th April, a few days previously. The mortality in England was not excessive, but in Dublin and Sligo it was very great, owing principally to the inferior diet, and the overcrowding of the poor in both those cities. A large number perished in Belfast, and some of the deaths were so sudden that the ignorant people imagined that their friends had been poisoned by the doctors—one esteemed physician having had to fly for his life, and clear a boundary wall to escape from the fury of the women. The minds of the people were unnecessarily depressed by the unwise arrangements of the Board of Health, by whose directions men in white smock-frocks paraded the streets, scattering lime broadcast as they passed along, ringing bells to warn the people off the streets when an ambulance was passing, conveying the sick to hospital, or a hearse carrying a corpse to the grave. At that time one of our national poets, John Banim, chose for his theme the all-engrossing topic, and in the "Dirge of the Cholera" made the dreaded potentate address the trembling nations in very stirring language, one stanza of which I still remember:—

> "Earth, tell me my commission, as from land to land I go,
> And the time, and place, and season, for me my might to show;
> Mankind declared the limits of my stay and scope with you,
> Come, prophesy the ending of the work I have to do!"

And although distress and suffering were visible on every side, yet out of great evil came a greater good, and a lasting benefit resulted from the visitation of the great sanitary reformer, for those pestilent slums and overcrowded hovels, those narrow lanes and unventilated alleys in which he revelled and found his daily victims, have been long since swept away, and been replaced by spacious thoroughfares and streets, well lighted and sewered. An abundant supply of pure water has been brought to the

[a] Graves' Clinical Lectures. Vol. I. Art., Cholera.

door of every inhabitant, baths have been erected, an end practically put to intra-mural interment, public cemeteries, parks, and abattoirs provided, overcrowding of lodging-houses prevented by official inspection, and the teachings of sanitary science recognised by all. Much, however, remains to be accomplished ere we can plume ourselves on our superior, or even on a satisfactory sanitary condition, or be in a position to defy the inroads of epidemic disease. We cannot boast of a comprehensive system of drainage; we have still to complain of a Blackstaff nuisance abated, but not suppressed; of an open sewer called the Millfield dam, traversing a densely-populated district; our street sewers are constituted on the principle of allowing all their valuable contents to run waste into the Lagan, causing the defilement of that naturally limpid stream, and as a result, in the hot season the deposits at Ormeau and in the bay at Holywood become sources of discomfort and danger to the residents in the neighbourhood. The system of air-holes on the street level, communicating with the sewers, is equally objectionable; it has been condemned by the highest sanitary authority. These apertures may give vent to noxious vapours affecting the passers-by, perhaps laden with the mephitic poison of enteric or other infectious disorders, or, in the possible event of its arrival, the virus of cholera itself evolved from the intestinal discharges of patients. This evil has lately been recognised and provided for in the city of London, for the Commissioners of Sewers are about to arrange, according to the *Lancet*, with all builders of new houses, to construct pipes for ventilating the house sewers, and to carry them above the roofs of the houses. When this is done effectually the ground level openings can be closed, and then the plague of sewer-gas will be a thing of the past.[a] Let us hope that our present worthy Mayor, who, like his prototype, the Roman governor of old, presides at once over our roads and bridges, may apply his eminent engineering and scientific acquirements to the suppression of those perennial sources of evil, the pollution of our tidal river, and other removable sources of sickness.

While on this topic, I think that it is a matter for grave consideration whether there should not be established a Citizen Sanitary Association in Belfast, to aid, as in Dublin, the efforts of the officers of the Corporation and of the Local Government Board. By the exertions of the Dublin Association numberless advantages have accrued to the citizens in the lessening of the sources of disease, ending in the result desired—the diminution of the death-rate. The contrast between the result of forethought and improvidence is clearly manifested by the details of the recent visitation of cholera in two Italian cities. In Naples, owing to the filth, the overcrowding, the narrow thoroughfares, and the lazy and luxurious habits of the Lazzaroni and other inhabitants, and the remissness of the municipal authorities, the mortality was appalling—equalling,

[a] Lancet. October, 1884.

during the continuance of the epidemic, the horrors of the pestilence in the Middle Ages; while in Rome, although several times attacked, through the prevision of the Government and the municipality, every case was isolated on its occurrence, and by means of medical inspection and perfect sanitation the pestilence was effectually stamped out before it had time to spread among the inhabitants.

In the actual presence of the epidemic one should cultivate a cheerful spirit, avoid unreasoning panics, and be observant of the rules of temperance in eating and drinking. It is not advisable to make any marked change in the ordinary dietary, but fish, unripe fruit, heavy soups, and twice-cooked food should be avoided. Excessive fatigue, long watching, late hours, and exposure to night air, are powerful predisposing causes. The clothing should be comfortable, with flannel next the skin; an abdominal flannel belt should be worn, such as was issued by the Horse Guards to every individual soldier during the prevalence of cholera in the neighbourhood. No purgative should be taken without medical advice. I lost a patient, in the epidemic of 1849, from his having unadvisedly taken a dose of Epsom salts. Cleanliness in the person, in clothing, and in the household, should be religiously observed. Frequent flushing of the closets and sewers should be carried out, followed by disinfectants, such as chloride of lime and zinc, sulphate of iron, or carbolic acid, and sulphur ignited occasionally in the halls and chambers. Every kind of filth that would be likely to contaminate the air, the food or the water of the community, should be got rid of. The evacuations of cholera patients should be received in vessels containing chloride of lime or carbolic acid. The clothing of the sick person should be exposed to the fumes of sulphur, to carbolic acid diluted, or in some cases, such as bed linen, destroyed by fire. Free ventilation and open air exercise for the healthy are advisable. Neither food nor any beverage should be partaken of in the sick room, and the hands engaged in ministering to the cholera patient should be carefully washed and disinfected before sitting down to a meal, by a solution of either bichloride of mercury, or other active remedy.

As a prophylactic, there is none equal in efficacy to dilute sulphuric acid, ten or fourteen drops of which should be taken three or four times daily in a goblet of water; by its careful administration to the inmates of the County Antrim District Asylum, Doctor MacCormac had the satisfaction of preserving them all from cholera during more than one epidemic, while the pestilence had obtained a footing in other institutions in Belfast. And in an epidemic of choleraic diarrhœa, some time since in London, Dr. Lewis, then Surgeon to the Post Office, rendered essential service to the employés by enjoining on them the use of the dilute sulphuric acid and water, which he called by the name of mineral lemonade.

While merely an interested observer of the epidemic of 1832, on its re-appearance, in 1834, I had the advantage of studying it in all its phases, when acting as pupil and assistant to my venerable preceptor and friend, Dr. Henry MacCormac, the Nestor of the medical profession in Belfast, and at that time in charge of the Cholera Hospital. His treatment was remarkably successful, for, even in the first outbreak, and in his statistical return to the Board of Health in 1832, he gave the details of 726 cases, with only 173 deaths, including patients also ill with chronic diseases, aged persons, infants, child-bearing women, and many moribund on admission. His plan of treatment was, in an adult not previously debilitated, to take from ten to thirty ounces of blood from the arm, to administer a scruple of calomel, with two grains of opium, washed down with brandy, or whiskey and water, and forty drops of laudanum; the medicine to be repeated in two or four hours till relieved. This was accompanied with stimulating liniments, frictions, hot air baths, rest in bed, and free draughts of cold water. After a few repetitions of the dose, the patient often awoke very weak, but out of danger. The consecutive fever, when it developed, was treated on ordinary principles. We had a recurrence of cholera in 1846–49, 1854, and 1866; some of these outbreaks were very severe, and while the indigent and the dissipated suffered most, we had invariably to lament the loss of citizens foremost in every philanthropic work. The epidemic of 1849 was especially fatal; its footsteps might be tracked, and its favourite haunts discerned, along the borders of the Blackstaff in Sandy-row, and in Lagan-street, where the muddy stream empties itself into the Lagan, by the damside and the Pound burn. The inhabitants of the Lagan village were nearly decimated. At that time, though close to the River Lagan, there was not even an attempt at sewerage; all the nuisances of the houses passed into puddles in front of the doors, making their way as best they could to the riverside; the more solid matter were collected and piled up on a heap at the end-house of the village till sufficiently large to be carted away. The sights and scenes in that locality are among the most painful of my recollections.

I have lying before me while I write a duplicate copy of a return to the local sanitary authority of thirty-two private patients attended in the epidemic of 1849—thirty-two patients and ten deaths. The treatment I followed was founded on my hospital experience. I find, however, that among the remedies used I trusted a good deal to the favourite prescription of Dr. Graves—the pil. plumbi. c. opio.

That spasmodic cholera is a zymotic disease of a highly infectious nature, the great bulk of the profession has always avowed, although at all previous times, as at present, there existed a small but very intelligent body that refused to admit the fact. The lesson taught by every visitation in Belfast demonstrated plainly that cholera is an imported disease,

spreading rapidly wherever it obtains admission, among the predisposed. The first case that appeared in Belfast in 1832, as reported by MacCormac, came from Glasgow; and the primary case in the last invasion was also an imported one, and arose in this way:—A woman having been deserted by her husband, took refuge in the Union Workhouse; a warrant was issued by the Belfast magistrates for his arrest; he was discovered in Edinburgh, and resided in a house in a wynd infected with cholera. On his way over in custody he became ill, and on his arrival he was removed to the Union Hospital, where I saw him. His wife joined him there. He was then in the algide stage, and died soon after. After the man's death one of the nurses in attendance took the disease, his wife removed to Millfield, and although not affected herself, the people with whom she lodged took the disease from her, which then spread like wildfire through Millfield and the damside, and eventually through the town. What better proof of the infectious nature of the disease could be given?

The intimate nature of the poison of cholera has always given rise to much speculation and discussion; it was formerly regarded by the contagionists as intangible and akin to the poison of scarlatina or typhoid fever, and propagated through the medium of the atmosphere by personal contact, or by fomites. Pettenkofer looks upon it as of malarial origin; he considers that the propagation of cholera is due to the rice water stools of patients, when in a state of fermentation, commingling with the soil, and that the special poison of cholera is a miasm generated out of this earth fermentation; he believes, also, that the dejecta of persons suffering from cholerine or diarrhœa are equally capable with cholera dejections of producing the pestilence.

The causal relations of micro-organisms to cholera have been much discussed, and later scientists, such as Koch and his followers, insist that it is owing to the influence of a microbe or bacillus, comma-shaped, always present in the intestines or excretions of cholera patients; while Klein and Cunningham as stoutly deny the truth of its universality, and affirm that cholera occurs independently of its presence, that the bacillus referred to is often found in the saliva of healthy individuals, and in the intestines of those dying of dysentery and other non-infectious disorders. In the Report of the Special Commission sent out to make a scientific inquiry into cholera in India, these gentlemen, in their preliminary statement, set forth explicitly that the comma-shaped bacillus of Koch is neither universally present in cholera excreta, nor to be found in any quantity in the intestinal walls; that it occurs in other intestinal affections, and that in its mode of development in artificial cultures it does not behave differently from the ordinary mode of growth of putrefactive bacteria. The Commissioners deny to the special form of bacillus any distinctive or pathogenic property, and these observations

stand in direct contradiction to the very positive affirmations of the Berlin authority.—*Lancet*, Cholera Report.

The truth of the comma-bacillus theory has also been very widely questioned by Dr. Emmerich, of Munich, who has discovered the existence of a bacterial organism in all the tissues of cholera-affected patients; his statements have been confirmed by the observations of Dr. Buchner, who maintains that the organisms should be distributed in the tissues generally; whereas the comma-bacilli are but seldom found in the intestinal walls, and not at all in any of the internal organs. He further maintains that no corresponding relation exists between the number of the bacilli and the severity of the attack, and that very severe cases of cholera have been observed in which they seem to be altogether absent.

In so far we may fairly consider that the arguments on either side are inconclusive; and, looking at the discussion from a practical or therapeutic point of view, we may feel inclined to agree with Virchow; when referring to the question of the cholera bacillus in the German Reichstag, he warned the members, amid the murmurs of many, not to imagine that the question was finally settled with its discovery, and hinted that we were no nearer the eradication of consumption, with all our knowledge of tubercle bacillus.[a]

But whatever the remote cause, be it microbe or bacillus, or some yet undiscovered factor, under its influence the nervous system becomes rapidly involved and its agency manifested in every prominent symptom; vomiting and purging are apparently due to an abnormal or excited condition of the nervous supply to the stomach and bowels; the choleraic voice, the vertigo, the spasms and cramps, the tremors betray their neurotic origin; the symptoms of collapse characteristic of the algide state, in accordance with the experiments and teaching of Claude Bernard, are dependent upon great irritation and hypertrophy of the sympathetic nervous system; while to the vaso-motor nerves may be attributed that depression of the functions of respiration and circulation, the most dangerous affections in the disease. We may discover additional proofs of nervous agency in the rapid deaths by cholera-sicca which occur in every epidemic, when men are stricken down as if by lightning, or prussic acid, or the concentrated virus of the upas tree; those rapid recoveries, too, that occur so often in cases apparently hopeless, forbid the idea that any serious organic affection could be the cause of the gravest symptoms.

In Dr. MacCormac's philosophic "Exposition of the Nature of Spasmodic Cholera," published in 1832, he gives it as his opinion "that the poisonous agency which produces cholera acts by destroying or diminishing the action of one of the three grand divisions of the nervous system by whose powers the human frame is maintained in life and vigour—the respiratory, the cerebral, and the sympathetic; and it is by the

[a] Vide Archiv Med., p. 173. October, 1884.

lesion or injury of the latter that we suppose cholera to be produced." Most of our modern authorities assign a similar reason for its causation, and Dr. Johnston and others give it as their opinion that the specific poison acts previously on the blood or the intestinal canal, then affects certain portions of the nervous system, especially the sympathetic and the nerve centres, thus influencing the circulating and respiratory organs.[a]

It then, I think, may be taken for granted that it is to a lesion of the sympathetic system that spasmodic cholera is due; and this being admitted, it would naturally follow that in looking for a remedy we should seek out an agent that will control and influence the system at fault. The indications for treatment, according to MacCormac, "consist in increasing the power of the stricken system of nerves, in remedying the results of its inefficiency, and in lessening and rendering light and easy the burden of its functions. There is, perhaps, no stimulant," he continues, "real or supposed, in the catalogue of medicine which has not been tried. *We are not acquainted with any direct and certain means of acting on the sympathetic nerves independently of the rest of the nervous system, and as this disadvantage cannot be avoided, it must be submitted to.*"

These pregnant and suggestive words were written more than half a century ago, and when perusing them for the first time very recently I was struck with admiration of the wonderful prevision of the writer, and with the philosophic grasp of mind which he brought to bear on the subject. I trust that I shall be enabled further on to demonstrate satisfactorily that modern physiological discovery, allied with clinical observation and experiment, have successfully supplied the desideratum, the want of which MacCormac so feelingly lamented.

While the doctor is perfectly sound in localising the lesion in the sympathetic, he erred, with many others, in mistaking irritation and hypertrophy for debility, and this was not unnatural in his case, as it was not till many a decade afterwards that Claude Bernard gave publicity to those scientific investigations which threw so much light on the pathology of cholera, and the *rôle* played by the sympathetic system in that disease. But, if it be true that the science of public health is devoted to the detection and prevention of disease, it is equally true to say that the science of medicine teaches us how to treat it after it has occurred, and to use every effort to effect a cure. Should it, then, unfortunately happen that all our preventive measures prove unavailing, that the enemy may carry our outer line of defence and penetrate into our citadel, it behoves us to settle beforehand how we shall act—with what arms, with what therapeutic remedies, we shall encounter the foe. Up to the present date the treatment of cholera has been empirical, or otherwise based on some hypothesis or theory unsupported by clinical facts; of the two, the empirical, founded on ordinary observations of accidental

[a] Vide Roberts' Practice of Medicine. P. 196. Article, Cholera.

relief, is the safer; for, in the words of Haynes Walshe:—"False theory is worse than no theory at all, in a sphere of knowledge where speculation entails action, where the practice of an art flows from the doctrines of a science."[a] It is thus that the castor-oil treatment of Johnston, founded on the eliminative idea, has proved a failure, because the theory itself has no pathological facts to sustain it. The same may be said of the depletive, the opiate, the calomel, the astringent, saline, derivative ozone and oxygen, the electrical and stimulant plans, spinal ice-bag of Chapman, venous injections, &c.

With regard to castor-oil, writes Dr. Macnamara:—"I was acting as House Physician to King's College Hospital, in 1854, when Dr. G. Johnston was treating his cholera patients on eliminative principles. I caught some of his enthusiasm on the subject, and came out to India the same year full of confidence and hope in castor-oil. These ideas were destined soon to pass through a severe ordeal, for in the following year I was left at Bhengulpore in charge of a field hospital. I was the only medical man in the place when cholera burst out among the Europeans and natives under my care. I went boldly to work with castor-oil, but it absolutely and completely failed. The mortality from the disease was fearful. I have since, on several occasions, tried castor-oil in cholera, but I have now finally abandoned it, having never seen any benefit arise from its use."—Aitken's "Science and Practice of Medicine," Vol. I., p. 717.

Doubtless I have witnessed recoveries under the most diverse plans of treatment, but, under the most successful, with a lamentable death-rate. Can the present generation really assume any progress in treatment, when the official reports from Paris last year give a percentage of deaths such as 50, and this not alone on the gross, but, what is more remarkable, a death-rate of one in two as the unvarying result after every distinctive mode of treatment? Need we wonder, then, that in India it is found that recoveries are as frequent under Nihilistic treatment as under the most energetic and scientific mode? In spasmodic cholera there are three well-defined stages—the preliminary, or diarrhœal; the stage of vomiting, purging, and cramps; and the third, or the algide, a state of collapse, with absent pulse, cold tongue and extremities, blue skin, and suppression of urine. The first stage may continue for hours or days, and yet, if unattended to, the different forms may follow so rapidly on each other that all interference may come too late. It is then of vital importance to call for medical aid without delay. In the words of Dr. MacCormac:—"There is no other disease for the cure of which so much depends upon the mental resources and presence of mind of the practitioner, or in which there is a greater temptation to heap remedy on remedy without calculating the strength of the remaining powers, and how much medication they are fitted to endure."

[a] Address on Medicine. Brit. Med. Jour., August 9, 1862.

In the diarrhœal stage, as in every other, rest in bed between blankets is indispensable, with every appliance capable of maintaining bodily heat in the extremities and trunk; turpentine and mustard stupes and epithems to the stomach and abdomen are advisable, with chicken broth, beef-tea, and starchy substances for food; milk and whey, if tolerated by the stomach, are useful; and as beverages, soda water and iced waters *ad libitum* are the most agreeable to the sufferer; barley water and a weak solution of chlorate of potass are also recommended. The medicines administered should be of the simplest nature, and among them dilute sulphuric acid holds the first place. It should be given in repeated doses of twenty to thirty[a] minims, in some agreeable menstrum, such as camphor mixture, and ten drops of laudanum with each dose increases its efficacy. This was formerly my routine plan of treatment in sporadic or epidemic cholera, but at present discarding all internal remedies, when given *carte blanche*, I merely apply some epispastic fluid with a camel's hair pencil, commencing behind the ear, and extending in the course of the pneumogastric nerve, as far as the angle of the lower jaw. The result is that the purging at once ceases, the patient often falls asleep and awakes cured, long before the vesication takes full effect. In the second stage, with profuse purging and vomiting, spasms and cramps in the stomach, bowels, and limbs, great anxiety, violent palpitation of the heart, and coldness of the extremities, I pursue the same simple plan, and have never found a second application necessary, as all those painful objective and subjective symptoms immediately disappear. In the algide stage, which, according to Claude Bernard, is due to great irritation and hypertrophy of the sympathetic nervous system, the antagonistic powers of the vagus nerves should also be invoked in a similar manner, and, if necessary, the vagus of the left side should also be appealed to by vesication over its course. I prefer usually blistering the right side, as "Kolman has shown, according to Dr. Hall, that the right pneumogastric supplies the whole of the small intestines. This is an *inhibitory* nerve, and has an antagonistic action to that of the sympathetic on the heart; stimulation of the portion of the sympathetic supplying the heart is followed by increased forcible contractions, but stimulation of the vagus going to the heart may cause its stoppage in complete diastole. This having been proved, may not the two nerves act oppositely on the intestines? May not stimulation of the inhibitory vagus be followed by results much the same as if the sympathetic supplying the small intestines were paralysed?"[b]

Stimulation by vesication over the vagus in choleraic purging and

[a] The curative value of dilute sulphuric acid has been freely recognised even by the followers of Koch, as it is stated no bacteria or bacillus can exist in an acid solution. These microbes nidify and propagate only in an alkaline base, and become sterilised at once in even a weak acid medium.

[b] British Medical Journal, Nov. 7, 1874.

vomiting certainly seem in my hands effectually to control and almost paralyse the sympathetic in the stomach and intestines, and to stop at once the inordinate secretions due to its agency. There is another important indication subserved by counter-irritation over the vagus—viz., the restoration of the cardio-inhibitory functions of that nerve which are evidently in abeyance in cases of cholera; the violent contraction and palpitation of the heart are controlled; the dilating power of its walls and cavities, especially of the left side, is restored; and the congestion of the pulmonary and arterial system is put an end to. Both Parkes and Simon testify to the fact of the left side of the heart in cholera being generally found empty, while the right side is distended and full of blood. And Dr. George Budd, in a contribution on "Concentric Hypertrophy of the Left Ventricle," published in the *Med.-Chir. Trans.*, Vol. XXI., states that he met with it in many instances of sudden deaths from cholera; after maceration the cavity of the ventricle, which before would not contain a blanched almond, resumed its natural capacity. Budd also quotes M. Jackson, who, in the Report on Cholera in Paris in 1832, noticed the fact that the hearts of persons who died of the disease often presented the appearance of concentric hypertrophy of the left ventricle. Further light has been thrown on the antagonism of the pneumogastric and sympathetic nerves, at a meeting of the Société de Biologie, in Paris, at which M. d'Arsenval read a note from the unpublished papers of Claude Bernard, on the antagonism of these systems of nerves, and compares their relative action to that of the chorda tympani and the salivary glands.—*Vide Lancet*, January 17, 1885, pp. 244-45. According to Foster, stimulation of the chorda brings about two events—the dilatation of the blood-vessels of the gland, and a flow of saliva. When, however, the cervical sympathetic is stimulated, the vascular effects are exactly contrary of those seen when the chorda is stimulated; the small arteries are contracted; sometimes the flow through the gland is almost arrested. The sympathetic, therefore, in this instance acts as a constrictor nerve, and in this sense is antagonistic to the chorda. Foster says, further on, p. 195:—"The injection of the submaxillary gland, which follows stimulation of the chorda tympani, presents a very close analogy to the inhibition of the heart by stimulation of the vagus." Czermak was the first to point out that in the dog the effect of vagus stimulation was hindered by concomitant stimulation of the sympathetic. A plan of treatment adopted by Dr. Hall, and which obtained the approval of Sir Joseph Fayrer, and the Medico-Chirurgical Society of London, at its meeting on 13th October, 1874, merits a special notice, particularly as its *modus operandi* proceeds on the same lines as my vagus treatment of cholera—viz., by influencing and controlling the undue action of the sympathetic in the abdomen. Hall advises the subcutaneous injection of chloral hydrate in solution in the proportion of 10 grains to 100 parts

of water, into 4 or 5 parts of the body, according to the size of the syringe. If reaction does not commence in an hour, he injects again. The sedative soothes the contracted nerves, and relaxes the contracted blood-vessels, the blood is more uniformly distributed, the pulse consequently reappears at the wrist, the cramps and abdominal pains subside, sleep is induced, the respiration becomes regular, the discharges lessen, the face fills out, the voice becomes stronger, and the natural secretions are restored. Mr. Higginson, in his report to the Deputy-Commissioner of Oude, at Keri, states that of 19 cases of cholera treated by him on Hall's method, 17 recovered, being about 89 per cent. of cases.

The *rationale* of my plan of treatment may be easily deduced from the physiological facts just detailed. It is simply the practical application in disease of recognised pathological and physiological principles and discoveries, whose constant relationship of antecedence and sequence suggest the idea of their being governed by a well-defined pathological law. Given a special disorder, dependent upon a serious lesion of the great sympathetic, a system of nerves confessedly under the control of a portion of the cerebro-spinal division—viz., the pneumogastric nerve, when the latter is stimulated to action by an irritant, whether electric, galvanic, or a rapidly-acting vesicant, applied over the site of its sheath in the cervical region, it immediately develops its inhibitory powers, and thus controls and suppresses the exuberant activity of its ordinary antagonist, the great sympathetic. For so far in my experience, the action of the liquor epispasticus of the Pharmacopœia has been sufficient to put a drag on the progress of the disorder; but, as in cholera every moment is precious, the rapid action of the galvanic current should be invoked for the purpose.

In illustration of my plan of treatment in cases of cholera infantum and cholera nostras, or English cholera, I append a few striking cases, selected from a large number. The first two appeared previously in the *Lancet* of August 16th, 1884:—

Case I.—Constable C. sent for me to Queen-street police barrack, on 18th September, 1883, at 8 30 a.m. I found him in the act of vomiting, with small quick pulse, violent cramps, forcible palpitation of the heart; great debility, fainting, and coldness of the extremities. He was purged at frequent intervals, and the dejecta of the usual rice-water character. He informed me that when on duty in the police cells at 4 a.m. same day, he was attacked with profuse vomiting, followed in an hour by violent purging and cramps, an attack occurring about every fifteen minutes. I did not prescribe any internal medicine, but painted him at once in the hollow behind the ears, down as far as the angle of the lower jaw, with the liquor epispasticus of the Pharmacopœia, assuring him at the same time that he would not have any recurrence of the

symptoms. I visited him again at 10 30 a.m., and found him convalescent, not having had either sickness or purging, as I had predicted.

Case II.—*Cholera Infantum.*—On September 24th, 1884, I was summoned to a child living in Upton-street, Belfast, aged twenty months, and saw her at 11 30 p.m. I found the child lying prone on the mother's knees, with its arms and legs hanging listlessly on either side; it was cold and feeble, almost pulseless. I was told that it had sickened at 6 p.m., and had vomited at least every quarter of an hour till my arrival. Its illness was attributed to a mug of soup, partaken on the previous day. Before my arrival the mother had administered milk and lime-water without any benefit. I did not recommend any medicine, but having placed the child on its back, I applied the blistering fluid with a camel's hair pencil, behind both ears and on the neck. Soon after the application of the remedy the child fell asleep, and at the expiration of half an hour I left for the night. Calling next day, at 10 a.m., I found the child in its mother's arms quite lively and well; neither vomiting nor purging, as I foretold, had returned.

Case III.—On Sunday, 25th July, 1883, I visited Miss H. She had taken ill with bilious vomiting and purging on the previous Friday, which had continued, till the time of my arrival, at frequent intervals. When I saw her the dejecta was of a pale, watery description; no food had remained on her stomach for several days, and she was exceedingly weak, cold, and pallid. As she was opposed to active treatment, I ordered opium every four hours, and a sedative mixture, with morphia hydrocyanic acid and chloric ether, with mustard epithems to the region of the stomach and abdomen, and to suck pieces of ice when thirsty. These remedies, with wine and light nutriment, were continued all day on Sunday and Monday without any advantage, but with increasing symptoms of debility, and wasted hands and features, and failing pulse. On Tuesday she gave her consent to the vesication; so, suspending all medication internally, I applied the liquor epispastic behind both ears; in a few hours the blister rose, and after one mild attack of vomiting she perfectly recovered.

Case IV.—On Monday, August 4th, 1884, I was sent for at 4 a.m. to see Mrs. L. She had been ill with diarrhœa on the previous Saturday. She was somewhat better on Sunday, but after retiring to rest on that night, the diarrhœa returned in a violent form with vomiting, and she was so much prostrated by the number and the severity of the attacks that she had fainted seven times from 1 a.m. till the time of my arrival. After each attack she required to lie upon the floor for several minutes ere she could bear to be raised to her couch. On the last occasion she had fallen so suddenly that her face was bleeding from coming in contact with the floor. She had severe spasms in her stomach preceding each

attack, and she was cold and almost pulseless. Without any delay I applied the blistering fluid behind her right ear, and in the sulcus over the vagus, and left her with her friends. Calling to visit her at noon, I was told that soon after I had left she fell into a sound sleep, and with the exception of one slight discharge from the bowels, all her sickness was at an end.

Case V.—Mrs. L. sent for me on October 14th, 1884, to see her child, aged six months, who had suffered from vomiting and purging for twenty-four hours. The child was greatly reduced, cold, and wan; had not retained any food of a solid or liquid nature for the last day; the pulse at the wrist was almost imperceptible. I immediately painted the little one in the usual place, informing the mother that all sickness would immediately cease. To re-assure her, I left a prescription for a sedative should any recurrence of the illness take place, but on revisiting the place next day the mother informed me that sleep soon overtook the child, that neither vomiting nor purging had returned, and that the prescription was unneeded.

Case VI.—On 2nd December, 1884, I was sent for to see Mary D., aged twenty-four, unmarried, a servant in a family in the suburbs of Belfast. I found her in the act of vomiting, from which she had been suffering for twenty-four hours. Along with this sickness, she had an attack of rheumatic inflammation in her right knee-joint, which was red, painful, and much swollen. This was her second attack, having been confined to bed for four weeks in 1880, at home in Banbridge. From the previous attack she emerged with valvular disease of the heart. She attributed her present attack to exposure on the previous Sunday to cold, and from having to walk the distance of a mile from the place of worship, through snow and rain, after passing from a heated atmosphere. She had a shivering that night, and on next day her knee became swollen and painful. She was then confined to bed in consequence, and on account of constant and severe sickness of stomach, which returned about every fifteen minutes, leaving her quite prostrate. She was hot and feverish, with intense headache, and pain in the back as well as in the knee; she could not bear the slightest movement or touch upon the knee. Her pulse counted 112; was full and bounding; skin very dry and hot; eyes suffused with crying; temperature, 101·6°. At 8 30 p.m. I applied the blister behind the right ear and down the neck, telling her mistress that her stomach sickness would immediately cease, and that I hoped that the rheumatism would disappear before the morning.

Dec. 3, noon.—Found the girl completely cured of the bilious vomiting, not having had even one attack after I left. She had slept well; a profuse perspiration had replaced the arid skin of the previous day, accompanied with a plentiful secretion of high-coloured urine. All pain had

left the knee-joint and spine; the knee was now scarcely susceptible of pain from pressure, swelling almost gone, and it was perfectly flexible. The blister had risen well; I got about four drachms of serum from it by puncture, which was neutral on testing. Temperature still 101·6°; pulse, 92; thirst gone, and strength rapidly returning.

4th.—Slept well; expressed herself quite free from pain and sickness; temperature, 99°; pulse, 60. I saw her again on 6th, when she sat up, and wished to be permitted to resume her work. On 7th she left for the country, and returned to her service a fortnight after.

This case is remarkable as exhibiting at once the controlling power of the remedy over gastric affections, and its dual action in the inhibition through the cardiac branches of the vagus, of undue cardiac action, and the suppression of neurotic endocarditis, with its accompaniment of joint pains, commonly known by the title of "rheumatic fever."

Many eminent men being strongly of opinion that cholera infantum, cholera nostras, and epidemic cholera, differ only in degree while similar in nature, I now feel quite justified in putting forward the simple remedy so successful in sporadic attacks, as a reasonable means of cure when the disease becomes epidemic; as to the identity of these ailments from a nosological standpoint, many writers and authorities strongly testify their convictions—for instance, Dr. Scriven lately, at a conference held at the Epidemiological Society on this subject, contended that sporadic cholera and epidemic cholera were of exactly the same nature, just as sporadic smallpox resembles the epidemic type.[a]

Dr. Guerin, at the Academy of Medicine, read a paper showing that the distinction between different forms of cholera is purely arbitrary, the malady differing merely in intensity. Dr. Dutrieux Bey, of Alexandria, says, "the distinctions established between Asiatic cholera and cholera nostras were but an arbitrary and artificial device."[b] And Surgeon-Gen. J. M. Cunningham, in a recent report[c] on cholera to the Government of India, asks is an isolated case of measles or smallpox different from the numerous cases which make up an epidemic, are they distinguished as variola nostras, or rubeola nostras; and yet these diseases, just like cholera, have their times of abeyance, and their times of epidemic prevalence.

In the domain of medical research it is seldom, as in that of the more exact sciences, that we can add to our store of knowledge by the aid of the deductive method of reasoning. Any advancement is generally effected by the patient process of clinical observation, or scientific experiment. We begin, in the words of W. H. Walshe, from individual facts, "and rise to those general inferences which are our most comprehensive expression of attainable truth. We cannot from first principles reason

[a] Lancet, September 6th, 1884.

[b] International Congress of Hygiene, Sept. 6th, 1884. The Hague Lancet.

[c] Lancet, July 28th, 1884.

down to individual facts, prior to the actual observation of these, and then by the facts themselves, when observed, demonstrate the absolute truth of the principles which enabled us to foresee and to predict them." [a] And yet the history of medicine is not without examples of men gifted with the prescient faculty, by the sole exercise of which they could arrive at conclusions of infinite importance, just as MacCormac was enabled at once to deduce from the nature of the symptoms of cholera the important lesion from which they spring, and to indicate at the same time the kind of remedy most desirable for its cure ; that disordered condition of the sympathetic system, which many years later Claude Bernard demonstrated as the causal lesion in cholera, and that mode of treatment which I have advocated as most in accordance with clinical and pathological facts, as well as the most successful in my experience.

Of MacCormac it may freely be admitted, to quote the eloquent words of Walshe, " that in some men whom the *mens divinior* illumines, in whose brains a spark of the divine essence scintillates, thought is grandest; it goes before facts, it creates, it divines them, and leaves experience to drag its slow length along to the goal of truth itself has long since reached. But we speak of the ordinary type of intellectual men, not of those exceptional marvels of whom some two or three are vouchsafed to the world in the course of a century." [b]

TREATMENT OF BILIARY COLIC.

Among the other purposes for which Kussmaul's procedure of washing out the stomach has been suggested, is biliary colic, due to impacted gall-stones. At a recent meeting of the Berlin Medical Society, Rosenthal reported two cases treated in this manner. One was that of a woman of thirty-three, who had been six months under his care with successive attacks of biliary colic, for which all the usual measures had been resorted to, morphine alone giving her relief. He then washed out the stomach, with a view to obtaining the sedative effect to which attention had already been called by Senator. As an apparent consequence, the vomiting, which had been troublesome, ceased. She returned almost daily to have the operation repeated, and on the fourteenth day she brought with her two gall-stones, each about as large as a hazel-nut. Since then she has had no recurrence of the symptoms. The second case was also that of a woman who suffered from very severe attacks of hepatic colic with obstinate vomiting, and after washing out her stomach for a few days, not only did the vomiting cease, but the stones were also passed. Rosenthal did not undertake to explain the *rationale* of this treatment.

[a] Address on Medicine, August 9th, 1862. British Medical Journal.
[b] Op. cit.

SANITARY AND METEOROLOGICAL NOTES.

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Vital Statistics

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, April 25, 1885.

Towns	Population in 1885	Births Registered	Deaths Registered			Deaths from Seven Zymotic Diseases							Deaths from Phthisis	Death-rate per 1,000	
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa		From all causes	From seven Zymotics
Dublin, -	353,082	728	903	148	206	–	62	9	4	5	19	11	122	33·4	4·1
Belfast, -	219,222	616	557	103	83	–	85	7	–	6	5	13	71	33·1	6·9
Cork, -	80,124	182	195	19	72	–	–	–	–	5	4	5	26	31·7	2·3
Limerick, -	38,562	70	69	4	20	–	–	–	–	1	7	–	4	23·3	2·7
Derry, -	29,162	63	57	8	11	–	–	2	–	–	–	–	8	25·4	0·9
Waterford,	22,457	45	73	15	10	–	15	–	–	–	–	2	11	42·3	9·9
Galway, -	15,471	24	22	2	7	–	–	–	–	–	–	1	3	18·5	0·9
Newry, -	14,808	42	29	4	8	–	–	–	–	–	1	–	7	25·5	0·9

Remarks.

In the eight selected towns included in the foregoing Table the highest death-rates are 42·3 per 1,000 of the population annually in Waterford, 33·4 in Dublin, 33·1 in Belfast, and 31·7 in Cork; the lowest rates are 18·5 in Galway, 23·3 in Limerick, 25·4 in Derry, and 25·5 in Newry. The rate of mortality from seven chief zymotics ranged from 9·9 per 1,000 per annum in Waterford, 6·9 in Belfast, 4·1 in Dublin, 2·7 in Limerick, and 2·3 in Cork to 0·9 in Derry, Galway, and Newry.

The recorded deaths represent a rate per 1,000 of the population annually of 23·7 in twenty-eight large English towns (including London, in which the rate was 22·4), 30·5 in the sixteen chief towns of Ireland, 28·7 in Glasgow, and 18·2 in Edinburgh. There is a decided increase (from 22·4 to 23·7) in the mortality in the English towns generally; and in London it has also risen in proportion—from 21·0 to 22·4 per 1,000 per annum. It has fallen in Glasgow (from 29·7 to 28·7), and also in Edinburgh (from 19·5 to 18·2). In the Irish towns the rate of mortality has fallen decidedly from 32·2 to 30·5. If the deaths (numbering 39) of persons admitted into public institutions from localities outside the Dublin Registration District are deducted, the death-rate of that district

becomes 31·9, while that of the portion of the district included within the municipal boundary is 35·6. In London the epidemic of smallpox unhappily shows a marked increase: the deaths were 179, compared with 109, 197, and 229 in the three preceding periods of four weeks each. The weekly number of deaths from this disease since the beginning of the year have been 56, 42, 70, 58, 59, 60, 56, 44, 37, 27, 35, 23, 24, 39, 40, 49, and 51 respectively. The deaths from diarrhœal diseases in the same city, which numbered 51 in the four weeks ending March 28, were 52.

Acute febrile zymotics were returned as the cause of death in 125 instances in the Dublin district, compared with a ten-years' average of 110·7 in the corresponding period and 135 in the previous four weeks. The 125 deaths included 62 from measles, 9 from scarlet fever, 19 from "fever," 5 from whooping-cough, 11 from diarrhœal diseases, and 4 from diphtheria. The epidemic of scarlet fever continues to decline gradually, the deaths being 6 fewer than in the four weeks ending March 28. Of the 19 deaths referred to "fever," 8 were ascribed to enteric fever and 9 to typhus, while in 2 instances the exact nature of the fever was either not specified or was ill-defined. The deaths from fever were 4 less than those registered (23) in the four weeks ending March 28. Five children aged between one and five years succumbed to scarlet fever. All of the 5 victims of whooping-cough were under five years of age, including 4 infants of less than twelve months old.

Measles caused 85 deaths in Belfast, 62 in Dublin, and 15 in Waterford. In Waterford the epidemic of measles shows a considerable decline; but in Dublin and Belfast it has again become more destructive to life and is very widespread. Since the beginning of the year the weekly numbers of deaths in Dublin have been 3, 3, 3, 5, 3, 5, 10, 11, 8, 10, 11, 16, 12, 13, 19, 15, and 15 respectively. Of the 62 victims to the disease, whose deaths were registered in the four weeks, 56 were under 5 years of age, including 11 infants of less than twelve months. The outbreak is subsiding in the North City Districts, in which 13 out of the 62 deaths were registered. In the South City Districts, on the contrary, the deaths were 44 against 22 and 3 in the previous two periods of four weeks each, showing a continued serious spread of the epidemic. In No. 3 South City District 13 deaths were referred to measles.

Scarlet fever was fatal in 7 instances in Belfast, and in 2 cases in Derry. Diarrhœal diseases were credited with 32 deaths in the eight towns, compared with 31 in the previous four weeks.

In the Dublin Registration District 728 births and 903 deaths were registered, compared with 832 births and 995 deaths in the previous four weeks. The births were those of 367 boys and 361 girls. The deaths of infants under one year were 148 against 174 in the previous four weeks; those of persons aged 60 years and upwards were 206, compared with 238 in the previous period.

The deaths referred to pulmonary consumption in the eight towns were 252, compared with 270, 244, and 239 in the three preceding periods of four weeks each. In Dublin diseases of the respiratory organs are stated to have caused 207 deaths, against an average of 203·9 in the corresponding four weeks of the previous ten years, and compared with 246, 225, and 213 in the three preceding periods of four weeks each. The 207 deaths included 129 from bronchitis (average = 142·9) and 47 from pneumonia (average = 34·3). The great mortality from pneumonia depended to a certain extent on the cold and searching weather experienced throughout March and the first three weeks in April. Of the 129 persons who succumbed to bronchitis, 16 were infants under twelve months, whereas 44 had passed their sixtieth year.

On Saturday, April 25, 1885, there were under treatment in the principal Dublin hospitals no cases of smallpox, 66 cases of measles, 35 of scarlet fever, 28 of typhus, 14 of enteric fever, and 10 of pneumonia.

The mean temperature of the four weeks was 45·1° in Dublin, 44·4° in Belfast, 46·0° at Roche's Point, Co. Cork, 43·7° at Glasgow, and 46·4° at Greenwich. The returns from Edinburgh are incomplete. The minimal readings of the thermometer in the screen were 30·5° in Dublin, 31° at Belfast, 33° at Cork, 27·0° at Glasgow, and 29·9° at Greenwich. The maximal temperatures were 66·1° in Dublin, 63° at Belfast, 59° at Cork, 61° at Glasgow, and 73·6° at Greenwich.

The weather continued very cold during the greater part of the period, but in the last week a remarkable increase of temperature occurred.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of April, 1885.

Mean Height of Barometer,	29·776 inches.
Maximal Height of Barometer (on 19th, at 9 a.m.),	30·319 ,,
Minimal Height of Barometer (on 24th, at midnight),	28·846 ,,
Mean Dry-bulb Temperature,	46·1°.
Mean Wet-bulb Temperature,	43·2°.
Mean Dew-point Temperature,	39·9°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·249 inch.
Mean Humidity,	79·8 per cent.
Highest Temperature in Shade (on 19th),	66·1°.
Lowest Temperature in Shade (on 3rd),	32·2°.
Lowest Temperature on Grass (Radiation) (on 3rd),	26·4°.
Mean Amount of Cloud,	55·5 per cent.
Rainfall (on 16 days),	2·911 inches.
Greatest Daily Rainfall (on 21st),	·620 inch.
General Directions of Wind,	E., S.S.E., S.W.

Remarks.

Until the 17th the weather remained cold and dry, with searching "polar" winds. On the date mentioned the long delayed spring may be said to have arrived with the setting in of equatorial winds. A burst of summerlike warmth on the 18th and 19th was followed by copious rains, soft winds and occasional hot sunshine by day, and rather low temperatures by night. The mean height of the barometer was 29·776 inches, or 0·081 inch below the average value for April—namely, 29·857 inches. The mercury rose to 30·319 inches at 9 a.m. of the 19th, and sank to 28·846 inches at midnight of the 24th. The observed range of atmospherical pressure was, therefore, 1·473 inches—slightly less than an inch and a half. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 46·1°; that calculated by Kaemtz's formula from the means of the daily maxima and minima was 45·6°, or 1·4° below the average mean temperature for April, calculated in the same way, in the twenty years, 1865–84, inclusive (47·0°). The arithmetical mean of the maximal and minimal readings was 46·7°. On the 19th the thermometers in the screen rose to 66·1°—wind variable; on the 3rd they fell to 32·2°. The minimum on the grass was 26·4° on the 3rd. The rainfall was 2·911 inches, distributed over 16 days. The average rainfall for April in the twenty years, 1865–84, inclusive, was 2·029 inches, and the average number of rainy days was 15·0. Both rainfall and rainy days, accordingly, were above the average. Sleet fell on the 1st and 5th, and hail on the 9th and 16th. The atmosphere was foggy on the 3rd, 14th, 15th, 17th, and 18th.

At the beginning of the month a V-shaped depression was passing away from Great Britain over the North Sea. The wind shifted to N. or N.N.W. in Ireland, and showers of sleet and hail fell locally. The next two or three days were quiet, bright, and cool, succeeding very sharp—even frosty—nights.

The week ending on Saturday, the 11th, was signalised by cold searching weather and "polar" winds.

On Easter Sunday, the 5th, an extensive and deep atmospherical depression advanced over Ireland from the Atlantic, causing a heavy fall of sleety rain in the afternoon, and a fresh S.S.E. gale. Next day proved unexpectedly fine and bright, although the barometer was very low. On and after the 7th the weather remained dull and cold for several days under the influence of a new system of low pressure, which spread slowly *westwards* from North Germany. This caused cold rainfalls in England, but in Ireland only some showers occurred.

The last cold day was Thursday, the 16th, when a depression advanced to the French coasts, producing N.E. winds in the British Islands. In the morning a sharp shower of rain and hail fell in Dublin, and the day

was throughout gloomy and bleak. Snow fell heavily in Liverpool and cold rain in the S. and S.E. of England.

A series of bright, springlike days followed. On Sunday, the 19th, temperature rose fast in Dublin from a minimum of 40·4° to a maximum of 66·1°. Next day, the weather was breaking in Ireland, but summer-like in England—the thermometer rose to 73° in London, but only to 63·6° in Dublin. After this day, cyclonic conditions became established, and rain fell in large quantities in Ireland and in heavy showers in most parts of Great Britain. In 28 hours, ending at 5 p.m. of the 22nd, 1·030 inches of rain were registered in Dublin. On the 24th a complex and very deep depression "edged" in from the Atlantic, causing fresh southerly gales and much rain. The barometer fell below 28·70 inches in the extreme N.W. of Ireland. After this the weather improved, but showers fell at intervals to the close of the month.

Of the rainfall registered in Dublin (2·911 inches), only ·597 inch was measured prior to the 21st, and this included one heavy fall of ·484 inch on Easter Day, the 5th. The rainfall of the last nine days of the month amounted to 2·314 inches, or 79·5 per cent. of the whole.

PERISCOPE.

THE FINALE OF A GREAT CRIME.

The current number of *La Belgique* records the death of Armand Peltzer, who, along with his brother Leon, was found guilty of the murder of William Bernays, the eminent Belgian advocate. The details of this crime, which was designed by Armand, now deceased, and carried out by Leon, were of the most sensational character, transcending the most exciting narratives of Braddon or of Allan Poe, and were fully described in the pages of this Journal for Feb., 1883, p. 106. The two brothers were sentenced to death, but, owing to the insuperable objection of the King of the Belgians to capital punishment, had the capital sentences altered to imprisonment for life. They were employed as bookbinders, and Leon being of a coarser organisation, appears to have reconciled himself to the situation. Armand, ambitious, unscrupulous, crafty, and fond of pleasure, felt keenly the loss of social position and enjoyment; he got thinner and weaker, and gradually fretted his life away. Last week he was attacked with pulmonary hæmorrhage, to which he quickly succumbed. Neither of the Peltzers had to complain of material discomfort, and, in fact, their treatment all along and at the close illustrates the present unhealthy moral atmosphere of social life in some parts of the Continent. Here they would have been convicted felons of the more heinous type, known by their prison numbers, dressed in prison clothes, and seeing their families at distant intervals, and separated

by the double cage. In the Belgian prison the Peltzers used to see their families whenever they liked, in a comfortably furnished room and in their ordinary clothing, which they used to put on for the purpose (*revetir les habites burgeois pour reçevoir la visite*). Leon had a taste for reading, and in his room were "The Letters of Paul Louis Courrier," "The History of Napoleon the First," by Lanfrey, and a number of works of fiction, travels, and history, lent to him by various private friends. He requested to be supplied with the *Revue de deux Mondes*, but the Director of the prison declined to permit this. In these countries the death of notorious criminals either passes unnoticed, or, at most, is briefly mentioned in the journals. The closing events of Armand Peltzer's life are described at length, and read very like the deathbed scene in "Traviata." All that was said and done by himself and by the others present is recorded with much unction, constituting a regular apotheosis of crime. The newspaper account concludes by mentioning that the remains of Armand Peltzer are to be removed from the prison of Louvain (where he died) to Berchem, the fashionable cemetery of Brussels, where they are to be interred in the family vault.

F. J. B. Quinlan.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Hypodermic Pocket Case.

Messrs. Burroughs, Wellcome & Co., of Snow Hill, London, E.C., have submitted for our opinion a specimen of their new complete pocket cases for hypodermic medication. It is the most compact and the cheapest pocket case we have yet seen. Fully fitted with ten glass tubes, each containing twelve compressed soluble "tabloids" or tablets for hypodermic use, and including syringe, needles, wires, mortar and pestle, or spoon—the case costs one guinea. But, to suit the convenience of purchasers, the cases can be supplied separately in morocco or metal, fitted with mortar and pestle, or spoon, two needles and wires, for five shillings; while the hypodermic syringe, fitted with two needles, can also be had separately, for seven shillings. Each tube of twelve "tabloids" costs as a rule one shilling.

The "tabloids" were originally suggested by Dr. H. Augustus Wilson, of Philadelphia, who read a paper on the subject before the American Medical Association, in May, 1881. They are prepared in a superior manner, and, upon being crushed, are readily soluble in a few drops of warm or cold water. The firm claim for the hypodermic tabloids absolute accuracy of dose, ready and entire solubility, and perfect preservation of the dose. Among the tabloids are included those of cocain ($\frac{1}{10}$ and $\frac{1}{6}$ grain), pilocarpin ($\frac{1}{10}$, $\frac{1}{3}$, and $\frac{1}{2}$ grain), and sclerotinic acid ($\frac{1}{2}$ and 1 grain).

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